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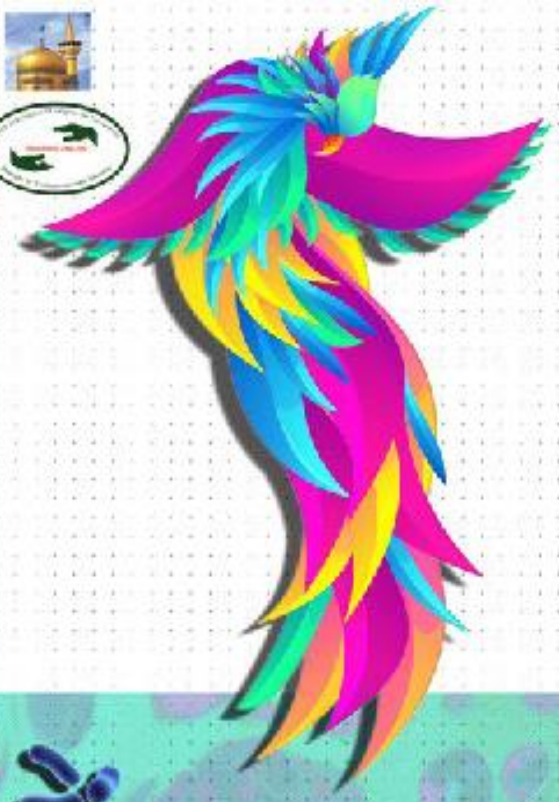
4th

International Nursing Congress on Pervention Strategies for Healthcare-associated Infections

Mashhad-Iran

5-7 November 2024



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4th International Posters Congress on Prevention Strategies for Healthcare-associated Infections
5-7 November 2024
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Poster Presentations

Patient Safety & Quality Improvement Journal
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Correlation between TWEAK Serum Level and HTLV-1 Proviral Load in HAM/TSP

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ARTICLEINFO

Posters

Keywords:
HTLV-1 ،HAM/TSP ،
TWEAK, Proviral load

ABSTRACT

Introduction: Human T Lymphotropic Virus type-I (HTLV-I)-associated myelopathy/tropical spastic paraparesis (HAM/TSP), the main neurologic manifestation of HTLV-I, is a chronic inflammatory disease. Viral-host interaction and host genetics are two important contributors to the development of the HAM/TSP.

Materials and Methods: This study was conducted to measure the serum level of TWEAK by ELISA method in three groups of participants including 34 HAM/TSP patients (HAM/TSP), 35 asymptomatic HTLV-1 carriers (ACs), and 20 healthy controls (HCs). Also, the titer of the proviral load in two groups of HAM/TSP and ACs was assessed by the real-time PCR.

Results: The statistical results showed that, there is no significant difference between the three groups in TWEAK cytokine level (P=0.667). Also, there was no significant difference in proviral load titer between groups of HAM/TSP and ACs (P=0.08). Furthermore, no significant difference was observed between proviral load and TWEAK cytokine concentration between groups of HAM/TSP and ACs.

Conclusion: Our findings showed that despite the inflammatory nature of HAM/TSP disease, the expression level of TWEAK in HAM/TSP patients is not significantly different from the groups of ACs and HCs. Therefore, the involvement of other factors in causing HAM/TSP is not unexpected.

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Index of Wounds and Analyze the Prevalence and Possible Causes of Ulcer in Dr. Sheikh Hospital

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ARTICLEINFO

Posters

Keywords:
Wound, Chemotherapy, Skilled Nurse, Extravasation

ABSTRACT

Introduction: Due to many statistics of chemotherapy and the high risk of ulcers in children under treatment in Dr. Sheikh Hospital, we decided to analyze the prevalence and possible causes of this complication

Materials and Methods: In this study, information about patients' wounds was collected between 18 April 2023 and 19 March 2024; Prevalence and etiology of ulcers have been investigated and analyzed.

Results: Among the 22159 admitted patients, 4,855 patients were at risk of ulceration according to the Glamorgan criteria. In this group, 0.54%led to ulcers. Common causes of ulcers include; respectively: 50% extravasation, 34% pressure ulcers and 15% Other causes of ulcers.

Conclusion: Suggested solutions to reduce this complication include; Use of modern technology in finding the vein (vein finder), Use of high quality peripheral vascular accesses, Standardize the patient-to-nurse ratio, Employing trained nurses and early Use of central vascular access (port, CV line, PICC) in chronic patients

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A Case of Common Variable Immunodeficiency in a Young Woman: The Importance of Detailed Medical History and Physical Examination in Diagnosis

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ARTICLEINFO

Posters

Keywords:
Common variable immunodeficiency, CVID, Immunoglobulin deficiency, Diagnosis, Pleural effusion, Bronchiectasis, IVIG therapy, Case report.

ABSTRACT

Common variable immunodeficiency (CVID) is an uncommon immune disorder that often presents with varied symptoms, leading to diagnostic delays. A 34-year-old woman arrived at our hospital with shortness of breath and a productive cough. A CT scan of the lungs revealed a right-sided pleural effusion, along with bronchiectasis and consolidation in the right lower lobes. Based on her medical history and physical examination, CVID was suspected, prompting further tests to measure serum immunoglobulin levels. The lab results confirmed the diagnosis, showing reduced levels of IgG, IgM, and IgA. The patient was treated with monthly intravenous immunoglobulin (IVIG). After three months of follow-up, she reported feeling well and experienced no further issues.

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A Cost-Effective and Rapid Method for Total RNA Extraction Using Proteinase K and RNA Carrier Treatment Followed by Heat Shock

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ARTICLEINFO

Posters

Keywords:
SARS-CoV-2, Total RNA, Extraction method, Heat shock

ABSTRACT

Introduction: The global outbreak of SARS-CoV-2 has underscored the importance of clinical detection methods. This study proposes an alternative RNA extraction technique that is both time-efficient and economical during the COVID-19 pandemic, particularly in contrast to conventional commercial RNA extraction kits.

Materials and Methods: We assessed the efficacy of two distinct RNA extraction protocols for detecting SARS-CoV-2 via Real-Time PCR (RT-PCR) from nasopharyngeal swabs. The protocols compared were: I) the standard method utilizing a commercial total RNA extraction kit and II) a suggested heat shock protocol. Key variables, including extraction time, centrifugation speed and duration, Proteinase K treatment, and RNA carrier addition, were optimized through a three-step process.

Results: Total RNA was extracted using both the commercial kit and the heat shock protocol. The proposed method involved treating samples with 5 µg/µL of Proteinase K at 56°C for 5 minutes, followed by heating at 95°C for an additional 5 minutes, and a subsequent thermal shock on ice for 3 minutes. After adding 4 µg/µL RNA carrier at room temperature for 3 minutes, samples were centrifuged at 7000 rpm for 10 minutes. The optimized method exhibited a sensitivity and specificity of 100% (CI: 95%).

Conclusion: Our findings demonstrate that this in-house extraction method is a viable, rapid, and cost-effective alternative for total RNA extraction, particularly beneficial in areas lacking access to commercial kits. Additionally, it serves as a reliable option during urgent situations.

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A Novel Presentation of Cerebral Malaria

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ARTICLEINFO

Posters

Keywords:
Malaria, Plasmodium falciparum, Cerebral Malaria, Spastic or scissor's gait

ABSTRACT

Malaria is a worldwide parasite infection with different types of symptoms caused by plasmodium species. Plasmodium falciparum is accountable for more severe illness and deaths. One of the most onerous presentations of plasmodium falciparum is cerebral malaria (CM) or cerebral malaria. An 8-year-old boy, presented with five days of fever, chills, headache and abdominal pain. Then, he developed impaired walking balance and spastic gait. Two weeks ago, he had a trip to Pakistan with his father with no chemoprophylaxis taken. On examination, he was positive for splenomegaly. His cranial nerves and cerebellar tests were normal and he had no signs of meningeal irritation. On the motor inspection, he showed rigidity in all limbs and the patellar reflex was +3. During hospitalization, cause of status epilepticus he transferred to intensive care unit. Ct scan of brain reveals signs of brain swelling. During admission in ICU, his hemoglobin and platelets dropped with elevated LDH. So, he undergoes platelets and packed cell transfusion. We suspected cerebral malaria and we performed a malaria rapid diagnostic test (RDT) along with the thick and thin peripheral blood smear (PBS). The RDT was positive and in PBS *Plasmodium falciparum* were seen. He treated with continuous seven days of intravascular Artesunate and demonstrated a considerable clinical improvement. Due to not eradication of plasmodium in PBS, we treated the patient with Coartem in three doses and Primaquine in one dose in the last day of Coartem. We attached Quinine and Clindamycin as third line of therapy cause of severe invasion of the disease and treatment failure. Also, He was treated with Baclofen and Clonazepam as anti-spastic drugs and Levetiracetam as anti-convulsive. On the follow up, thirty hours after initiating treatment, his GCS improved to 11/15 and after two days it was 14/15. Cerebral malaria is more common in *P. falciparum* with different presentations that the most prominent symptoms are seizure and coma. Although we expect the walking disorders like ataxia as post malaria complications, in this research we revealed a novel presentation of neuromalaria, spastic or scissor's gait. This result can be a clue for the subsequent researches to discover its' pathophysiology.

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A systematic Review on the Association of Exposure to Polymer Chemicals and the Infectious Disease

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ARTICLEINFO

Posters

Keywords:
Polymeric chemical, Pollutants, Infection, Human

ABSTRACT

Introduction: Polymeric chemical pollutants, including micro-plastics and various additives, have been shown to persist in the environment and accumulate in biological systems. This aims of this study is to evaluate the relationship between exposure to polymeric chemical pollutants and the incidence of infections in human body.

Materials and Methods: A systematic review of existing literature was conducted, including studies that examined the effects of polymeric chemicals on immune function, microbial balance, and infection rates. Data from various observational studies were synthesized through a systematic review to quantify the association. The risk of bias in reviewed articles was evaluated applying the Newcastle-Ottawa Quality Assessment (NOS) for observational studies. The analyses were done to determine the association of infection risk and exposure to such chemical materials.

Results: The analysis of previous high qualified studies shows that exposure to polymeric chemicals, especially bisphenol A (BPA) and phthalates, significantly increases the vulnerability to different types of infections. These chemical agents were identified as the cause of disruption in normal immune responses that lead to a weakness of defense system against pathogens. Chemical exposure can also alter the microbial flora that is able to increase the risk of bacterial infections in different parts of body.

Conclusion: The findings demonstrated the influence of polymeric chemicals pollution in incidence of infection in human body. This highlights the need for governing measures to minimize the exposure to such destructive and hurtful substances. Further comprehensive research is needed to show their long-term effects on human health. The study emphasizes the importance of addressing environmental pollution especially polymeric agents as a community health concern, mainly regarding its implications for infectious diseases.

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Age and Gender Distribution of Children with Measles in Akbar Pediatric Hospital in Mashhad

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ARTICLEINFO

Posters

Keywords:
Measles, Children, Age, Gender

ABSTRACT

Introduction: Measles is a highly contagious viral disease and can cause complications and even death. Measles first infects the respiratory tract and then spreads throughout the body. It is possible at any age. But usually involves children under 5 years of age. After more than 5 decades of vaccination in our country, one of the questions raised is, has vaccination been able to affect the age and gender distribution of the infected? This study was conducted with the aim of investigating the age and sex distribution of confirmed measles patients referred to Akbar Children's Hospital in Mashhad.

Materials and Methods: In this study, children who were admitted to Akbar Children's Hospital between March 2023 and April 2024 with a possible diagnosis of measles were examined, and samples for Measles PCR were taken from all of them as a census. The data collection tool was patient file documentation. Statistical analysis was done using SPSS 21 software.

Results: A total of 34 laboratory tests of measles in children hospitalized in this center were performed by PCR method. 26 of them were positive. Of these, 9 (35%) were girls and 17 (65%) were boys. Although the chi-square test did not show this difference to be significant, the frequency of male sex was significantly higher than female with positive PCR. In terms of age distribution, the minimum and maximum ages were 15 days and 12 years, respectively. The average age of children with positive PCR was 31.3 ± 40.7 months and the median age of them was 12 months.

Conclusion: The age distribution of the patients was based on the predictions made in the previous sources and the average age of the patients was approximately 2.5 years. According to the findings, the incidence of measles in the population of boys was almost twice that of girls.

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An Overview of Existing Evidence for Non-Pharmacological Interventions against COVID-19 Transmission

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Posters

Keywords:
COVID-19, Interventions, Non-Pharmacological, Prevention

ABSTRACT

Introduction: Non-pharmaceutical interventions (NPIs) are public health measures that aim to prevent and/or control COVID-19 transmission in the community. This overview aimed to summarize the most common available options of NPIs on reducing COVID-19 transmission have been implemented globally.

Materials and Methods: Eight databases: Medline, EMBASE, PyscINFO, Cochrane library, EMBASE, CINAHL, Web of Sciences, Scopus, and WHO database of publications on COVID-19 for peer-reviewed studies that reported on potential non-pharmacological interventions for COVID-19 were searched from 1 December 2019 through 10 January 2023. We included systematic review studies proposing NPIs for reducing COVID-19 transmission. Two authors independently undertook screening selection, data extraction, and quality assessment (using AMSTAR 2, and SANRA).

Results: 15 related studies were included. Evidence suggest that continued use of NPIs is the only containment strategy until 'herd immunity' is achieved to reduce the severe disease and mortality. There are three main categories of NPIs: individual (hand hygiene, face masks); environmental (cleaning and ventilation of indoor spaces.); and community (social distancing, isolation and quarantine). According CDC recommendation, an early response, and a combination of NPIs should be implemented simultaneously to maximize effectiveness. However, most NPIs can have a negative impact on economies and the physical, mental and social well-being of the underlying population. Therefore, their use should be guided by data on the local epidemiological situation, with the overall goal of protecting the most vulnerable individuals in the society.

Conclusion: An early response and a combination of individual NPLs (hand hygiene and use of facemasks), environmental NPLs (cleaning and ventilation of indoor spaces), and community NPLs (social distancing, isolation and quarantine) are effective at reducing COVID-19 cases and deaths. Key Words: COVID-19, Interventions, Non-Pharmacological, Prevention.

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Analysis of Length of Hospitalization and Cost of Treatment in Children with Measles Referred to a Specialized Pediatric Center

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ARTICLEINFO

Posters

Keywords:
Measles, Outbreak, Cost, Children

ABSTRACT

Introduction: Measles is a vaccine-preventable infectious disease that is transmitted from person to person and causes acute fever and rash. Considering the controlled incidence of measles in our country, the question arises as to what cost and duration of hospitalization will be associated with the outbreaks of measles. This study was conducted with the aim of investigating the duration of hospitalization and the cost of treatment in measles cases referred to a specialized children's hospital.

Materials and Methods: In this study, children who were admitted to a Children's Hospital between March 2023 and April 2024 with a possible diagnosis of measles were examined, and samples for Measles PCR were taken from all of them as a census. The data collection tool was patient file documentation. Statistical analysis was done using SPSS 21 software.

Results: A total of 34 laboratory tests of measles in children hospitalized in this center were performed by PCR method. 26 of them were positive. The average hospital stay for measles was 3.38 days. The minimum and maximum hospitalization days were 0 days and 11 days, respectively. The minimum cost of treatment was 8310000 Rials (about $15) and the maximum cost of treatment was 190000000 Rials (about $300). The average treatment cost was 47723070.6 Rials (about $80).

Conclusion: Knowledge of treatment costs in measles outbreaks can be helpful in the analysis of treatment costs and the cost-effectiveness analysis of prevention protocols. It is suggested that future studies be conducted to analyze the costs of measles treatment in outbreaks and compare the results with the costs of prevention.

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Anti-cancer Activity of the pCDH-VPR Recombinant Plasmid in Cervical Cancer Cell Lines

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ARTICLEINFO

Posters

Keywords:
Cervical cancer cell, Anti-tumour; Apoptosis, pCDH-VPR recombinant plasmid, VPR

ABSTRACT

Introduction: Cervical cancer (CC) is one of the most common gynecologic malignancies, about half a million cases of cervical cancer are diagnosed worldwide. The human immunodeficiency virus type 1 (HIV-1) accessory protein, VPR, arrests the cell cycle of the G2 phase, and induced apoptosis. The viral protein R (Vpr) is packaged in the virus particle and is crucial for the replication of the HIV-1 virus in human cells. The role of VPR in the regulation of HIV-1 virus transcription has been determined, and this protein plays a role in the expression of envelope proteins, mRNA splicing, transport of the pre-integration complex to the nucleus, induction of apoptosis, activation of host genes, and inhibition of the innate immune system. this VPR-mediated apoptosis can be implicated in an efficient cancer therapy. Here, we screened new candidates for cervix cancer cell death by using recombinant pCDH-VPR recombinant plasmid.

Materials and Methods: Caski and Hela cervical cancer cells were transfection with pCDH-VPR recombinant plasmid, then investigated apoptosis and necrosis were undertaken using flow cytometry assay.

Results: Our results indicate that exposure of Caski and Hela cells to pCDH-VPR recombinant plasmid can cause 8.4%, 11.2% and 19.5% apoptosis and 0.6%, 2.8% and 1.5% necrosis in Hela cells cervical cancer the three time periods of 24 hours, 48 hours and 72 hours, respectively. Also, lentivirus vector containing VPR gene can cause 20.5%, 39.3% and 37.7% apoptosis and 2.3%, 4.2% and 18.9% necrosis in Caski cervical cancer cell line in three time periods of 24 hours, 48 hours and 72 hours. As a result, the lentivirus vector containing the VPR gene can probably play a role in the treatment of cervical cancer.

Conclusion: The purpose of this study was to investigate that pCDH-VPR recombinant plasmid are associated with anti-cancer activity against Caski and Hela cells. While the exact mechanism of the anti-cancer activity of pCDH-VPR recombinant plasmid against Hela and Caski cells remained unknown. But according to the flowcytometry assay, it seems this stategy can be indiction necrosis and apoptosis in the presence of pCDH-VPR recombinant plasmid are possible mechanisms of anti-cancer effect against hela and caski

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Anti-cancer evaluation of Lentiviral vector expressing Vpr protein of Human Immunodeficiency Virus Type 1(HIV1) in the human liver cancer cell line

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ARTICLEINFO

Posters

Keywords:
Liver cancer, Anti-Tumor, pCDH-VPR recombinant plasmid, VPR

ABSTRACT

Introduction: Liver cancer ranks as the sixth most prevalent malignancy globally and is the fourth leading cause of cancer-related mortality. Despite advancements in therapeutic strategies, overall survival rates for liver cancer patients have remained stagnant over recent decades. This study explores the potential of the vpr protein from the HIV virus as a candidate for cancer therapy, given its ability to interact with host cellular proteins and induce apoptosis through multiple mechanisms. Specifically, Vpr has demonstrated efficacy in promoting apoptosis and G2 phase cell cycle arrest across various cancer cell lines. Additionally, its functionalities include mRNA splicing, immune system stimulation, viral genome packaging, and facilitating the nuclear transfer of viral pre-integration complexes.

Materials and Methods: To investigate the cytotoxic effects of the pCDH-VPR recombinant plasmid on HepG2 liver cancer cells, the VPR gene was isolated from the pBluescript II plasmid using BamHI and XbaI restriction enzymes. Following linearization of the lentiviral plasmid, the VPR gene was ligated to this vector using T4 DNA Ligase, confirmed via electrophoresis at each step. The recombinant plasmid was then transformed into TOP10 bacterial cells for amplification and subsequently extracted using a purification kit.

Results: Our findings indicate that the recombinant pCDH-VPR plasmid does not induce significant apoptosis or necrosis in HepG2 cells, with observed apoptosis rates of 4.2%, 1.4%, and 4.2%, and necrosis rates of 0.95%, 17.1%, and 1%. Consequently, the lentivirus vector containing the VPR gene appears unlikely to exert a meaningful therapeutic effect in the treatment of liver cancer, although further research is warranted to elucidate the underlying mechanisms of any potential anticancer activity.

Conclusion: This study highlights the complexities of utilizing the pCDH-VPR recombinant plasmid against HepG2 cells and suggests that while VPR holds promise, its effectiveness as a liver cancer treatment remains inconclusive.

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Antibacterial Effects of Postbiotics of *Pediococcus acidilactici* on *Staphylococcus Aureus* (ATCC 13813)

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ARTICLEINFO

Posters

Keywords:
Postbiotics, Pediococcus acidilactici, Antibacterial, Staphylococcus aureus

ABSTRACT

Introduction: Finding new antibacterial substances to fight against pathogenic microbes, due to raised antibiotic resistance the International Scientific Association for Probiotics and Prebiotics (ISAPP) defined a postbiotic as "a preparation of inanimate microorganisms and/or their components that confer a health benefit on the host.

Materials and Methods: Postbiotics were prepared in a liquid culture medium of Mueller Hinton broth in a shaker incubator. Finally, the effect of these postbiotics on *Staphylococcus aureus* was determined through MIC and MBC tests, as well as through the Agar disk diffusion and Agar well diffusion method by determining the diameter of the halos.

Results: The average MIC value of *Pediococcus acidilactici* postbiotics on this bacterium was 31.25 µl/ml and the Average MBC was 62.55 µl/ml. Disks diffusion with 105, 125, and 145 microliters of *Pediococcus acidilactici* formed halos with diameters of 8.33±0.58a, 10.00±1.00 a, and 11.33±1.53 b millimeters with p-value of 0.043. in the well diffusion method *Pediococcus acidilactici* postbiotics in concentrations of 125, 135, 145, and 155 microliter formed halos with a diameter of 22.00±1.00 a, 26.00±1.00 b, 26.67±0.58 b, and 29.33±0.58 c millimeters around the well with the p-Value of 0.001.

Conclusion: The postbiotics of *Pediococcus acidilactici* inhibited the growth of *Staphylococcus aureus* (ATCC 13813).

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Antibacterial Potential of Algae-Derived Natural Compounds: A Promising Approach to Combat Antibiotic Resistance

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ARTICLEINFO

Posters

Keywords:
Algal Compounds, Antibacterial Activity, Natural Antibiotics, Antimicrobial Resistance (AMR), Phlorotannins Fucoidans, Biofilm Inhibition, Multi-Drug Resistant Bacteria (MDR)

ABSTRACT

Introduction: Natural compounds derived from algae have gained significant attention as potential alternatives to conventional antibiotics, especially in light of the global rise in antimicrobial resistance (AMR). Algae, both macro and micro, produce a wide array of bioactive compounds such as polysaccharides, terpenoids, and phenolic compounds, which exhibit diverse antibacterial properties. This systematic review aims to evaluate the antibacterial efficacy of natural compounds extracted from various algae species, focusing on their mechanisms of action, potential therapeutic applications, and effectiveness against multi-drug resistant (MDR) bacteria.

Materials and Methods: A comprehensive literature search was conducted across multiple databases, including PubMed, Scopus, Web of Science, and Google Scholar, covering articles published between 2000 and 2023. The search terms included "algal compounds," "antibacterial activity," "antimicrobial resistance," and "natural antibiotics." Studies were selected based on their relevance to algae-derived compounds with demonstrated antibacterial efficacy. Articles discussing the mechanisms of action, biofilm inhibition, and the interaction of algal compounds with conventional antibiotics were included. Data were extracted and analyzed to assess the effectiveness of these compounds against both Gram-positive and Gram-negative bacteria.

Results: The review identified several key algal compounds, including phlorotannins, fucoidans, and algal polysaccharides, with significant antibacterial activity. These compounds were particularly effective against MDR strains such as *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and *Escherichia coli*. Phlorotannins were noted for their ability to disrupt bacterial cell walls, while fucoidans demonstrated strong biofilm inhibitory properties. Additionally, some compounds exhibited synergistic effects when used in combination with conventional antibiotics, enhancing the overall antibacterial efficacy.

Conclusion: Algal-derived compounds hold great promise as alternative or complementary agents to combat bacterial infections, particularly in the context of antibiotic resistance. Their broad-spectrum activity, coupled with mechanisms that differ from conventional antibiotics, positions these natural compounds as valuable resources for developing new antimicrobial strategies. Further research is needed to explore their clinical applications, optimize extraction methods, and evaluate potential side effects to ensure their safe and effective use in medical practice.

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Antibiotic Resistance and Detection of Sulfonamide Resistance Genes (sul1 and sul2) among Clinical Isolates of *Stenotrophomonas Maltophilia*

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ARTICLEINFO

Posters

Keywords:
Antibiotic resistance, *Stenotrophomonas maltophilia*, Sul gene

ABSTRACT

Introduction: *Stenotrophomonas maltophilia* (*S. maltophilia*) is an emerging multidrug-resistant global opportunistic pathogen associated with high mortality. In this study, we evaluated the antibiotic-resistance profile and antibiotic resistance genes among *S. maltophilia* isolates.

Materials and Methods: *S. maltophilia* isolates were collected between 2021 and 2022 from four tertiary care hospitals in Iran. Antimicrobial susceptibility was evaluated by Kirby–Bauer disc diffusion method. Polymerase chain reaction (PCR) was used to determine the presence of sulfonamide resistance genes.

Results: Among the 94 collected *S. maltophilia* isolates, the highest susceptibility was against trimethoprim-sulfamethoxazole (96.8%) followed by minocycline (95.7%) and levofloxacin (93.6%). Furthermore, sul1 and sul2 genes were detected in 61 (64.8%) and 31 (32.9%) isolates, respectively.

Conclusion: The present study reveals a low frequency of antibiotic resistance among the *S. maltophilia* isolate, while the prevalence of antibiotic resistance genes was high. Thus, identification of these genes for infection control programs and to prevent the spread of resistant bacteria is very important.

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Antibiotic Resistance of *Enterococcus Faecalis* Isolated from ICU Departments of Hospitals in Hamadan

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ARTICLEINFO

Posters

Keywords:
Enterococcus faecalis, Antibiotic resistance, Vancomycin

ABSTRACT

Introduction: Enterococcus faecalis is a bacterium commonly associated with hospital-acquired infections, particularly in intensive care units (ICUs). Due to its ability to acquire resistance to a broad range of antibiotics, it presents a significant challenge in healthcare settings. This study aimed to evaluate the antibiotic resistance patterns of Enterococcus faecalis isolated from ICU patients in hospitals across Hamadan.

Materials and Methods: In this cross-sectional study, samples of *Enterococcus faecalis* were collected over a six-month period from ICU patients in three major hospitals in Hamadan. After identification and confirmation of the bacterial species using standard microbiological techniques, antibiotic susceptibility testing was performed using the Kirby-Bauer disk diffusion method. The antibiotics tested included vancomycin, ampicillin, ciprofloxacin, tetracycline, and gentamicin.

Results: The results revealed that 70% of *Enterococcus faecalis* isolates were resistant to ampicillin, and 50% exhibited resistance to vancomycin. Additionally, 60% of the samples were resistant to ciprofloxacin. None of the isolates showed complete resistance to gentamicin, but 40% were resistant to tetracycline. Moreover, multidrug resistance (MDR) was observed in 45% of the isolates.

Conclusion: The high level of antibiotic resistance observed *in Enterococcus faecalis*, especially within ICU settings in Hamadan, is a serious concern that requires immediate intervention to control and prevent the spread of this bacterium. It is essential to implement stricter monitoring and appropriate antibiotic usage in these environments to reduce resistance rates. Further studies with larger sample sizes and investigations into factors contributing to drug resistance are recommended.

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Antibiotic Resistance of *Proteus* Isolated from Urine Samples of Pediatric Patients in Hospitals of Hamadan

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ARTICLEINFO

Posters

Keywords:
Antibiotic resistance, *Proteus* species, Urine samples, Pediatric patients

ABSTRACT

Introduction: *Proteus* species are common pathogens responsible for urinary tract infections (UTIs) in children. These infections can lead to significant morbidity if not treated effectively. The rising incidence of antibiotic resistance in Proteus species is a growing concern, particularly in hospital environments. This study aimed to assess the antibiotic resistance patterns of Proteus isolates from urine samples of pediatric patients in teaching hospitals across Hamadan.

Materials and Methods: In this cross-sectional study, urine samples were collected from pediatric patients suspected of UTIs in several teaching hospitals in Hamadan over a six-month period. *Proteus* isolates were identified using standard microbiological techniques. Antibiotic susceptibility was evaluated using the Kirby-Bauer disk diffusion method. The antibiotics tested included ceftriaxone, ampicillin, ciprofloxacin, trimethoprim-sulfamethoxazole, and gentamicin.

Results: The study found that 65% of the *Proteus* isolates were resistant to ampicillin, while 55% showed resistance to trimethoprim-sulfamethoxazole. Additionally, 40% of the isolates were resistant to ciprofloxacin, and 30% exhibited resistance to ceftriaxone. However, only 15% of the isolates showed resistance to gentamicin. Multidrug resistance (MDR) was detected in 35% of the isolates.

Conclusion: The significant levels of antibiotic resistance in *Proteus* isolates from pediatric urine samples in Hamadan's teaching hospitals highlight the need for vigilant antibiotic stewardship and continuous monitoring of resistance patterns. Targeted therapy based on susceptibility testing is crucial to ensure effective treatment of UTIs in pediatric patients and to minimize the spread of resistant strains. Further research to explore the underlying causes of resistance and to develop effective preventive strategies is recommended.

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Antibiotic Resistance Pattern of *Stenotrophomonas maltophilia* Isolated from Bacteremia Patients

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ARTICLEINFO

Posters

Keywords:
Stenotrophomonas maltophilia, Antibiotic resistance, Disc diffusion

ABSTRACT

Introduction: *Stenotrophomonas maltophilia* (*S. maltophilia*) is an opportunistic pathogen that results in nosocomial infections in immunocompromised individuals and is considered a global threat due to the increase of intrinsic antibiotic resistance. The aim of this study was to determine the antibiotic resistance profile of *S. maltophilia* isolates collected from blood cultures of patients.

Materials and Methods: In this study, 28 blood samples with the early diagnosis of *S. maltophilia* were collected. *S. maltophilia* was identified using common biochemical methods, and the final confirmation of the samples was performed by examining the 16S rRNA gene by molecular polymerase chain reaction (PCR) method. Antibiotic susceptibility testing was performed using disc diffusion method according to the Clinical and Laboratory Standards Institute (CLSI) guideline.

Results: Isolates were resistant to levofloxacin (10.71%), minocycline (7.14%), and trimethoprim-sulfamethoxazole (3.57%). Among the 28 isolates obtained, 17 were from males and 11 were from females.

Conclusion: Considering the appropriate effectiveness of the trimethoprim-sulfamethoxazole, it can be concluded that the isolates are still sensitive to this antibiotic and it is considered as the best therapeutic option in Iran.

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Antibiotic Resistance Patterns in Nosocomial Infections: A One-Year Study in Alavi Hospital, Ardabil

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ARTICLEINFO

Posters

Keywords:
Antibiotic resistance,
Nosocomial infections,
Infection control

ABSTRACT

Introduction: The rise of nosocomial infections is considered as a significant health threat, according to longer hospital stays and higher mortality rates. The increasing resistance of microbes to antibiotics ensnare treatment, making difficult to select effective medications. This study aims to investigate the antibiotic resistance patterns of common pathogens in nosocomial infections in Alavi Hospital, and emphasize the significant role of resistance pattern to manage and control these infections.

Materials and Methods: In this cross-sectional study, we collected data on antibiotic susceptibility (antibiograms) from patients with four common types of hospital-acquired infections from september2023 until September 2024. Out of 540 samples, 178 with positive cultures were detected and their resistance pattern was analyzed according to CLSI standards.

Results: The analysis showed that 40% of positive culture samples were *Escherichia coli* with 84.53% resistant to third- and fourth-generation cephalosporins, 26.4% of cases were *Klebsiella* , showing 94.44% resistance to beta-lactamase inhibitors, *Pseudomonas aeruginosa* made up 14% of cases, with 79.16% resistance to carbapenems, *Acinetobacter* was found in 10% of cases, exhibiting 100% resistance to carbapenems and 93.75% resistance to fluoroquinolones. *Staphylococcus aureus* accounted for 6% of infections, with 87.5% resistance to beta-lactams and 2.2% of the samples were *Enterococcus*, showing 100% resistance to clindamycin.

Conclusion: The growing prevalence of antimicrobial resistance in comparison with past years, especially Gram-negative bacteria, affirms the urgent need for strict antibiotic stewardship programs. The resistance patterns observed in this study highlight the increasing presence of multi-drug resistant pathogens, emphasizing the critical importance of infection control guidelines such as hand hygiene, environmental cleaning, and patient isolation to reduce nosocomial infections and control antibiotic resistance.

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Antibiotic Resistance, an Analysis of Bacterial Cultures in a Pediatric Hospital

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ARTICLEINFO

Posters

Keywords:
Antibiotic resistance,
Bacterial cultures ,
Children

ABSTRACT

Introduction: Antimicrobial resistance (AMR) is one of the top global public health and development threats. The misuse and overuse of antimicrobials in humans, animals and plants are the main drivers in the development of drug-resistant pathogens. AMR drivers and consequences are exacerbated by poverty and inequality, and low- and middle-income countries are most affected. AMR puts many of the gains of modern medicine at risk. It makes infections harder to treat and makes other medical procedures and treatments – such as surgery, caesarean sections and cancer chemotherapy – much riskier. The world faces an antibiotics pipeline and access crisis. There is an inadequate research and development pipeline in the face of rising levels of resistance, and urgent need for additional measures to ensure equitable access to new and existing vaccines, diagnostics and medicines. Pediatric patients are particularly vulnerable to antibiotic-resistant infections, as children are often exposed to antibiotics and have immature immune systems. Furthermore, bacteremia is a leading cause of mortality among pediatric patients, and its treatment is threatened by the alarming increase in the prevalence of AMR. In the present study, our aim is to increase the awareness of antimicrobial resistance among children by providing a description of the epidemiology and the antimicrobial resistance rate of the main isolated bacterial pathogens in children.

Materials and Methods: In the study, distribution of the isolated specimen types and top three pathogens of children admitted to Ali ebne Abi Talib hospital in Zahedan from 2022 to 2024 were determined.

Results: Urine 65(22.33%): *Escherichia coli* (50) *Klebsiella spp*. (9) *Coagulase-negative Staphylococci* (1), Respiratory tract 83(28.52%): *Pseudomonas spp*. (39) *Acinetobacter* (27) *Klebsiella spp*. (10) Blood 132 (45.36%): *Coagulase-negative Staphylococci* (40) *Pseudomonas spp.* (27) *Escherichia coli* (27) and Stool 11 (3.78%): *Shigella* (6) and *Escherichia coli* (5).

Conclusion: It is crucial to understand the prevalence and patterns of antibiotic resistance in pediatric hospital settings.

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Antimicrobial resistance correlation with surgical site infection: a review

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ARTICLEINFO

Posters

Keywords:
Antimicrobials, Resistance, Surgical site infection, AMR, SSI.

ABSTRACT

As warned by Sir Alexander Fleming in his Nobel Prize lecture: "The use of antimicrobials can, and will, lead to resistance". Bacteria are simple and adaptable microorganisms able to change themselves when the conditions of their environment are no longer privileged, for example, in the presence of antibiotics. Therefore, antimicrobial resistance (AMR) has to be regarded as a natural phenomenon to which any antibiotic provides. The AMR threat happens due to the overuse and misuse of antibiotics, often unnecessarily or without a prescription. Additionally, the use of antibiotics in animals (food-producing, companion, or exotic) has significantly granted to the selection and transmission of resistant bacteria. Unfortunately, even proper administration of antibiotics is eventually associated with developing resistance, usually within 1 to 2 decades of introducing a particular drug. In some cases, it comes within 3 to 4 years. Globally, the threat and costs of AMR are widely acknowledged. For example, antibiotic-resistant pathogens result in approximately 33,000 deaths per year in Europe and 4.95 million total deaths worldwide, resulting in EUR 1.5 billion in healthcare expenses and productivity losses annually. The World Health Organization (WHO) considers AMR "one of the ten global public health threats facing humanity" based on the predictions that by 2050, it will be accountable for more than 10 million deaths per year, with a loss of more than 100 trillion dollars worldwide. Surgical site infections (SSI) pose a significant public health challenge to the effectiveness of surgical procedures worldwide, particularly in developing nations. The issue lies in the strong connection between surgical site infections (SSI) and the growing challenge of antimicrobial resistance, a situation worsened by the misuse of antibiotics in surgical prophylaxis and inadequate infection prevention and control practices. In this review, we discuss the correlation of AMR with SSI in both Human and veterinary Medicine and its impact on public health.

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Aptamer-Enhanced Antimicrobial Peptide Hydrogel: A Targeted Approach for Pseudomonas aeruginosa Eradication in Wound Care

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ARTICLEINFO

Posters

Keywords:
Aptamer, Pseudomonas aeruginosa, Wound care

ABSTRACT

Introduction: *Pseudomonas aeruginosa*, a common pathogen in chronic wound infections, is notorious for its biofilm formation and resistance to conventional treatments. Aptamers, short oligonucleotides with high affinity for specific targets, have recently emerged as novel binding molecules for enhancing the efficacy of wound dressings. This systematic review focuses on aptamer-functionalized antimicrobial peptide-armored hydrogels for the targeted removal and eradication of *P. aeruginosa*.

Materials and Methods: A systematic search was conducted in PubMed, Scopus, and Web of Science databases, covering studies from 2010 to 2023. The key terms used included "aptamers," "*Pseudomonas aeruginosa*," "antimicrobial peptides," "hydrogel wound dressings," and "biofilm eradication." Studies that evaluated the efficacy of aptamer-hydrogel composites in wound care were included.

Results: Aptamer-functionalized hydrogels showed a significant increase in specificity and efficacy in targeting *P. aeruginosa* biofilms. The antimicrobial peptides incorporated within the hydrogel exhibited broad-spectrum activity, while the aptamers provided high specificity to *P. aeruginosa*, allowing for selective removal of the pathogen. The hydrogel matrix also contributed to sustained release of the antimicrobial peptides, improving overall wound healing outcomes.

Conclusion: The combination of aptamers and antimicrobial peptides in hydrogel dressings represents a novel and effective approach for treating *P. aeruginosa* infections. This targeted treatment strategy could revolutionize wound care by improving specificity and minimizing off-target effects.

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Caffeine as a Selective Inhibitor of Cancer Cell Migration and Proliferation: Implications for Therapeutic Use

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ARTICLEINFO

Posters

Keywords:
Caffeine Cancer cell proliferation Cell migration Normal cells Apoptosis Anti-cancer therapy Selective cytotoxicity MTT assay

ABSTRACT

Introduction: Caffeine, a naturally occurring xanthine alkaloid found in coffee, tea, and other plants, has been widely studied for its potential biological effects, including its impact on cell proliferation and migration. While caffeine is a known stimulant of the central nervous system, recent research has also explored its possible anti-cancer properties, particularly in inhibiting the growth and migration of cancer cells. This study aimed to investigate the differential effects of caffeine on the migration and proliferation of both cancerous and normal cells.

Materials and Methods: In this experimental study, human cancer cell lines (e.g., breast, lung, or colon cancer cells) and normal cell lines (e.g., fibroblasts or epithelial cells) were treated with varying concentrations of caffeine (ranging from 50 to 500 μM). Cell proliferation was measured using the MTT assay over a period of 24, 48, and 72 hours. Migration assays were performed using a scratch-wound healing assay to observe the migratory behavior of both cell types post-caffeine exposure. Additionally, flow cytometry was utilized to assess cell cycle progression and apoptosis. Statistical analysis was conducted using one-way ANOVA to compare the differences between treated and untreated groups.

Results: The results demonstrated that caffeine exhibited a dose-dependent inhibitory effect on the proliferation of cancer cells, with a significant reduction in cell viability observed at concentrations of 200 μM and higher (p 0.05). In contrast, normal cell proliferation was less affected by caffeine, showing minimal reduction in cell viability even at higher concentrations. The migration assays revealed that caffeine significantly impaired the migration of cancer cells, particularly at concentrations of 250 μM and above, while normal cell migration was only slightly reduced. Furthermore, flow cytometry data suggested that caffeine induced cell cycle arrest in the G2/M phase in cancer cells, leading to increased apoptosis.

Conclusion: This study highlights the potential of caffeine as a selective anti-cancer agent that can inhibit both the proliferation and migration of cancer cells, while sparing normal cells. These findings suggest that caffeine could be explored as a complementary therapeutic option in cancer treatment, although further in vivo studies and clinical trials are needed to confirm its efficacy

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Changes in Number, Morphology and Volume of Platelets during Neonatal Sepsis

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ARTICLEINFO

Posters

Keywords:
Neonates, Sepsis, Platelets, Platelet distribution width (PDW), Mean platelet Volume (MPV)

ABSTRACT

Introduction: Thrombocytopenia is considered as one of the signs of sepsis but, Changes in number, morphology and volume of platelets is not widely researched upon in this matter. Therefore, the current study is aiming to analyze the changes in number, morphology and volume of platelets during neonatal sepsis.

Materials and Methods: This cross-sectional study has been carried out on 807 premature neonates suspected to have infection in Ghaem hospital Mashhad from 2015-2023 by using available sampling method. The data collection tool, researcher- made checklist included laboratory evaluations by which platelet indicators {Platelet count, Platelet distribution width (PDW) and mean platelet volume (MPV)} were measured and compared before, during infection and after recovery. Afterwards, platelet characteristics in septic neonates (Case group) were compared to neonates without definite signs of infection (Control group).

Results: Two hundred ninety-five neonates (35.5%) had definitive sepsis. In the case group the number of platelets was less and the amount of MPV and PDW were higher than control group. The number of platelets decreases during infection, but this numbers increase after recovery. PDW increases during infection and after recovery. Fifty four percent of infected neonates had thrombocytopenia. Thrombocytopenia in 78% of neonates with sepsis caused by *Klebsiella pneumonia* and in 58% of the cases caused *Enterobacter aerugenes* was seen. The optimal cutoff value of platelet to differentiate case from those of control group was lower than 100000/mcL, with a sensitivity of 73%, specificity 12.2% (AUC=0.427), MPV more than 9.8(Fl), with a sensitivity of 80%, specificity 47% (AUC=0.618), PDW more than 11.2(Fl), with a sensitivity of 90%, specificity 28.4% (AUC=0.763).

Conclusion: During infection the number of platelets decreases, but MPV and PDW increase. Thrombocytopenia was seen more in Gram-negative bacteria rather than Gram-positive. During infection the number of platelets decreases but after recovery the number of platelets, MPV and PDW increases. Platelet indices have good sensitivity but low specificity in diagnosing definitive infection.

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Characterizing the Incidence and Trends of Bloodstream Infections in an ICU Setting: A Retrospective Analysis of Five Years in Mashhad, Iran

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ARTICLEINFO

Posters

Keywords:
ICU, Bloodstream infections, Antimicrobial utilization, Bacterial growth, Gram-positive, Gram-negative, Multidrug-resistant, Antibiotic selection, Antimicrobial susceptibility patterns

ABSTRACT

Introduction: Intensive care unit (ICU) patients are often found to have bloodstream infections. This investigation aimed to analyze the antimicrobial utilization patterns in blood cultures within the ICU of the leading educational hospital in northeastern Iran.

Materials and Methods: Blood samples collected from ICU patients at Imam Reza Hospital in Mashhad, Iran, between 2017 and 2021 were retrospectively examined. Medical records were used to extract patient data, and GraphPad Prism 6.0 and SPSS software (version 16) were used for statistical analysis.

Results: Of the total study participants (n=8013), 3932 (49%) were male. The mortality rate was 51% (n=4122) in ICU ward which is more than in male compared female (55% vs. 45%). Of the total of ICU patients, 1265 (16%) showed bacterial growth and of these 29 different kinds of pathogens were identified. Grampositive bacterial species were more frequently isolated, with a total of 607 cases, compared to Gram-negative bacterial species, which accounted for 587 cases. The most commonly identified pathogens responsible for bloodstream infections were *Acinetobacter spp*. and *Klebsiella spp*. Among them, methicillin-resistant *Staphylococcus aureus* was observed in 60% of the cases. Furthermore, 18% of *Klebsiella* infections and 50% of *Acinetobacter* infections contained multidrug-resistant gram-negative bacteria.

Conclusion: The findings revealed a concerning increase in multidrug-resistant strains among the detected microbes which provide valuable information on antimicrobial susceptibility patterns, which can help guide antibiotic selection and dosing.

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Chronic Granulomatous Disease and Invasive Aspergillosis in a 4.5-Year-Old Child

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ARTICLEINFO

Posters

Keywords:
Chronic Granulomatous Disease, Pediatric, Infection, Aspergillosis

ABSTRACT

A 4.5-year-old boy presented to the hospital with three weeks of fever, cough, and weight loss was later diagnosed with a case of chronic granulomatous disease and invasive pulmonary aspergillosis. He was initially started on empiric treatment for community-acquired pneumonia. Suspicion of TB led to the addition of anti-TB therapy. However, his condition further deteriorated to warrant the persistence of investigations that eventually yielded an immunodeficiency with *Aspergillus* species. He responded quite well to a combination antifungal therapy including liposomal amphotericin B and voriconazole. This case therefore is an emphasis that CGD shall be considered in patients with recurrent infections with opportunistic pathogens.

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Chronic Meningitis: A Diagnostic Dilemma

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ARTICLEINFO

Posters

Keywords:
Chronic meningitis, Infectious etiology, Tuberculous, Brucella, Outcome, Mortality

ABSTRACT

Introduction: Chronic meningitis is defined as the presence of neurological symptoms in combination with cerebrospinal fluid pleocytosis for more than 4 weeks. In many cases, it presents a diagnostic dilemma. The differential diagnosis includes a wide range of infectious and non-infectious etiologies, such as autoimmune diseases and malignancies. The burden of illness is high. For example, the estimated mortality rate for tuberculous meningitis as an infectious etiology is about 20% to 42% in hospitalized patients.

Materials and Methods: In a study, we evaluated hospitalized adult patients with subacute and chronic meningitis in Mashhad, Iran.

Results: Among 183 episodes, tuberculous and brucella meningitis were identified as the most common infectious causes respectively, but in about 25% of cases the etiology was unknown. In-hospital mortality rate was about 14.5% and unfavorable outcome occurred in 30.5% based on the Glasgow outcome scale.

Conclusion: Our study highlighted the importance of improving diagnostic strategies to enhance the prognosis and reduce mortality. Also, we should consider a case-based approach in addition to algorithmic method for prompt, accurate and in-time diagnosis of subacute and chronic meningitis.

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Clinical Outcomes and Laboratory Findings in Patients Treated with Acyclovir: A Comparative Study

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ARTICLEINFO

Posters

Keywords:
Acyclovir, Herpes simplex Encephalitis, Antiviral

ABSTRACT

Introduction: Acyclovir is a commonly used antiviral medication for the treatment of various viral infections. This study aimed to investigate the clinical characteristics, laboratory findings, and outcomes of patients treated with acyclovir compared to those who did not receive the drug.

Materials and Methods: A total of 95 patients were included in the study, with 57 receiving acyclovir and 38 not receiving the drug. Demographic data, clinical characteristics, reasons for ICU admission, CSF analysis, EEG findings, brain imaging results, and outcomes were compared between the two groups.

Results: Patients treated with acyclovir had a significantly longer hospital stay (median 20 days vs. 11 days, p=0.005) and were more likely to experience loss of consciousness (54.4% vs. 28.9%, p=0.014). Acyclovir patients had higher levels of albumin (median 2.8 vs. 0, p=0.028) and AST (median 24 vs. 0, p=0.037) in their blood. CSF analysis revealed higher total cell counts (median 90 vs. 9, p=0.043), leukocyte counts (median 3 vs. 0, p=0.009), and lymphocyte counts (median 30 vs. 0, p=0.008) in the acyclovir group. Abnormal CT scans were more common in the non-acyclovir group (77.8% vs. 50%, p=0.144), while abnormal MRI findings were more prevalent in the acyclovir group (67.9% vs. 20.8%, p=0.507). Recovery rates were similar between the two groups (59.2% for acyclovir vs. 40.8% for non-acyclovir, p=0.950).

Conclusion: This study shows that acyclovir treatment is recommended for patients with adverse neurological conditions. Therefore, the results revealed a potential relationship between acyclovir treatment and adverse neurological outcomes, characterized by loss of consciousness, increased albumin and AST levels, and changes in CSF parameters. These findings warrant further research to clarify its clinical significance and inform optimal management strategies for patients receiving acyclovir therapy.

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Clinical Process and Outcome of Neonates Infected with Covid- 19 in Koodakan and Alzahra Educational and Medical Centers of Tabriz

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ARTICLEINFO

Posters

Keywords:
COVID-19, Neonates, Viral Infection, Clinical process.

ABSTRACT

Introduction: According to recent evidence, the risk of severe outcomes in COVID-19 patients is increased in elderly and people with underlying medical diseases such as high blood pressure, heart diseases, or diabetes. However, A few studies of clinical process and complications, in the neonates infected with COVID-19 are available. The aim of this study is the clinical process and outcomes of neonates infected with COVID-19 in the educational and treatment centers for children and Al-Zahra in Tabriz.

Materials and Methods: In this study, all neonates infected with COVID-19were entered between March 2020 and the end of 2022 (for two years). A list has been prepared that demographics information of age and gender, risk factors of disease, clinical information, length of the hospitalization, and the final outcome and complications of the disease have been collected and analyzed. The results were evaluated based on clinical and Para clinical manifestations such as chest X-ray (CXR), CT scan, and echocardiography.

Results: This cross-sectional study investigated 55 neonates with COVID-19. 60% of neonates were male. The mean age of neonates with Covid-19 was 3 days (IQR: 1-14). The average birth weight was 2300 grams. The most infants with COVID-19 in this study have mild severity of disease (67.3%), (18.2%) moderate, (10.9%) severe and (3.6%) serious patients. No case of mortality was observed.

Conclusion: The clinical course of COVID-19 in neonates are mostly mild form of disease also Serious and severe forms of disease are also observed, which lead to intubation and need for hospitalization in the ICU, but it does not lead to morbidity and mortality.

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Clinical Symptoms, Maternal and Neonatal Risk Factors of Neonatal Sepsis

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ARTICLEINFO

Posters

Keywords:
Clinical signs, Risk factors, Early neonatal sepsis, Late neonatal sepsis, Neonate

ABSTRACT

Introduction: Regarding the improvement of medical care the incidence of sepsis has shrunk, however, neonatal sepsis is one of the most common causes of neonatal mortality. This study aimed to evaluate the clinical symptoms, maternal and neonatal risk factors of definitive neonatal sepsis in newborns admitted to the neonatal intensive care unit.

Materials and Methods: This retrospective study was conducted on 285 infants admitted to the NICU of Ghaem Hospital in Mashhad during 2011-18 with available sampling. Neonates with positive blood culture and at least one clinical symptom and laboratory result of sepsis were considered as definitive sepsis. After confirming the diagnosis based on the laboratory report, the researcher-made checklist which contains maternal, neonatal, and laboratory characteristics of the neonates was completed. Finally, the gathered data were coded and entered into SPSS. Central descriptive indices were used to describe the results.

Results: Among 285 infants, 53.8% were boys, and 46.2% were girls. 35.44% of cases were diagnosed as early sepsis and 64.66% as late sepsis. 86% of our babies were preterm. The most common risk factors of maternal for early neonatal sepsis were Premature rupture of membrane 56 (19.6%), preeclampsia 43 (15.08%), hypertension 21 (7.36%), chorioamnionitis 19 (6.6%), and diabetes mellitus 13 (4.56%). According to the t-test, duration of hospitalization, duration of mechanical ventilation, and duration of oxygen therapy were risk factors for late sepsis. The most common clinical and laboratory symptoms were respiratory distress, hypotension, SPo2 loss, apnea, jaundice, abdominal distention, tachycardia, murmurs and seizures, high CRP (77%), thrombocytopenia (53%), leukocytosis (38%), coagulopathy (36%), and high ESR (22.3%).

Conclusion: According to the results, the most common maternal risk factors for neonatal sepsis were premature rupture of membrane (PROM) and prematurity. Therefore, controlling and eliminating the predisposing factors of PROM and prematurity may reduce the incidence of neonatal sepsis. The most common clinical symptoms were respiratory distress and positive CRP.

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Co-delivery of Doxycycline and Rifampicin Using CdTe-labeled poly (lactic-co-glycolic) acid for Treatment of Brucella Melitensis Infection

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ARTICLEINFO

Posters

Keywords:
Brucella melitensis, PLGA, Doxycycline, Rifampicin

ABSTRACT

Introduction: Brucellosis poses a significant challenge in the medical field as a systemic infection with a propensity for relapse.
Materials and Methods: This study presented a novel approach to brucellosis treatment, enhancing the efficacy of doxycycline and rifampicin through the use of poly (lactic-co-glycolic) acid coupled with cadmium-telluride quantum dots (DoxRif-PLGA@CdTe). The double emulsion solvent evaporation method was employed to prepare Dox-Rif-PLGA@ CdTe. The study scrutinized the physicochemical attributes of these nanoparticles. The impact of antibiotic-loaded nanoparticles on *Brucella melitensis* was evaluated through well diffusion, minimum inhibitory concentration (MIC), and cell culture.
Results: The chemical analysis results demonstrated a possibility of chemical reactions occurring among the constituents of nanoparticles. Assessments using the well diffusion and MIC methods indicated that the impact of free drugs and nanoparticles on bacteria was equivalent. However, the drug-loaded nanoparticles significantly decreased the colony-forming units (CFUs) within the cell lines compared to free drugs.
Conclusion: The synthesis of nanoparticles adhered to environmentally friendly practices and demonstrated safety. The sustained drug release over 100 h facilitated drug accumulation at the bacterial site, resulting in a heightened therapeutic effect on *B. melitensis* and improved outcomes in brucellosis treatment. The application of these synthesized nanodrugs exhibited promising therapeutic potential.

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Common clinical findings in children diagnosed with measles in Akbar Children's Hospital

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ARTICLEINFO

Posters

Keywords:
Measles, Child, Clinical finings

ABSTRACT

Introduction: Despite the availability of safe and effective vaccines since 1963, the WHO estimates that 530,000 children under the age of 15 died in 2003 from measles and its complications. The onset of measles ranges from 7-14 days after exposure. The first symptom of measles is high fever (4 to 7 days). The prodromal phase includes lethargy, anorexia; The triad is conjunctivitis, cough and coryza. Considering that widespread vaccination has reduced the incidence of measles, the clinical picture of measles in outbreaks is questionable. The present study was conducted with the aim of investigating the prevailing clinical picture in measles patients referred to Akbar Children's Subspecialty Center.

Materials and Methods: The population of the current study is children with measles. The sample size includes 37 children who were admitted to Akbar Children's Hospital between April 1402 and May 1403 with the possibility of measles. Sampling was done in the form of a census among children suspected of having measles, who had been tested for measles PCR. The data collection tool was patient file documentation. Statistical analysis was done using SPSS 21 software.

Results: Between April 1402 and May 1403, a total of 34 laboratory tests for measles in children admitted to this center were performed by PCR method, 26 out of 34 samples were positive. Fever was the most common clinical finding. Fever and rash are two prominent symptoms of the disease, and cough and conjunctivitis are significant manifestations. But one of the notable findings was the occurrence of 40% of nausea and vomiting. Headache and seizures were not reported in any of the patients.

Conclusion: It seems that the clinical table of measles is still the same as the conventional table. However, in the studied sample, the triad of cough, conjunctivitis and rash was observed in only 20-30% of patients. These findings point out the need to re-image the clinical manifestations of measles.

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Comparative Evaluation of Thymol's Synergistic Effects with Ceftazidime and Cefotaxime on Klebsiella pneumoniae

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ARTICLEINFO

Posters

Keywords:
Klebsiella pneumoniae, Thymol, Ceftazidime, Cefotaxime, Synergistic

ABSTRACT

Introduction: This study aimed to compare the antimicrobial effects of thymol/ceftazidime and thymol/cefotaxime on *K. pneumonia* bacteria.
Material and Methods: Antimicrobial effects of thymol/ceftazidime and thymol/cefotaxime were performed first individually and then combined on *K. pneumoniae* ATCC 100031 by the MIC-MBC method. Therefore, the antimicrobial effects of the compounds that had a synergistic impact were performed on ten clinical strains using the MIC-MBC method. The identification of chemical bonds, functional groups, and molecular interactions of the mentioned compounds was investigated using an FTIR device. Checkered method, biofilm inhibition on *K. pneumoniae* ATCC 100031, cytotoxicity investigation on red blood cells (RBCs) by hemolysis and human skin fibroblast cells (Ffk) by MTT method were performed. Thymol/ceftazidime and thymol/cefotaxime had synergistic effects. Finally, the results of the tests were compared between the two compounds.
Results: The results of this study showed that the antimicrobial effects of the thymol/ceftazidime (4/1 µg/ml) were better than the thymol/cefotaxime (4/2 µg/ml) in both clinical and ATCC strains. In the examination with the FTIR device, both compounds had bonds of OH carbohydrates proteins, polyphenols, C=O Amide I band, C-O-Cpolysaccharide, C-Namide III band, but one band named C=C conjugated, C≡C in both compounds showed the connection between thymol with ceftazidime and cefotaxime. The biofilm inhibition effects of thymol/ceftazidime (59.54%) were better than thymol/cefotaxime (46.36%) on K. pneumoniae ATCC 100031. The bacterial killing time curve of the thymol/ceftazidime at a lower concentration and time was better than the thymol/cefotaxime. Cytotoxicity of synergistic compounds on RBCs and human Ffk cells was not different and was lower than that of Triton X-100.
Conclusion: Considering the antibiotic resistance of ceftazidime and ceftazidime in the treatment of diseases caused by *K. pneumoniae* bacteria, the thymol/ceftazidime in this study showed better antimicrobial, anti-biofilm, and bacterial killing time effects than the thymol/cefotaxime. This combination can be used as a new drug in patients after further studies.

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Comparative Investigation of Bioactive Effects of Thymol/Ceftazidime and Thymol/Ampicillin against Escherichia coli

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ARTICLEINFO

Posters

Keywords:
Escherichia coli, Thymol, Ceftazidime, Ampicillin, Bioactive

ABSTRACT

Introduction: This study aimed to compare the bioactivity of thymol/ceftazidime with thymol/ampicillin on *Escherichia coli* (*E. coli*).
Material and Methods: Antimicrobial effects of thymol/ceftazidime and thymol/ampicillin were performed first individually and then combined on E. coli ATCC 25922 by MIC-MBC method. The antimicrobial effect of compounds that had synergistic effects eas performed on twenty clinical strains using the MIC-MBC method. Identification of chemical bonds, functional groups, and molecular interactions of the mentioned compounds were investigated with an FTIR device. Checkered method, time killing curve and biofilm inhibition on *E. coli* ATCC25922 bacteria, investigation of cytotoxicity on red blood cells (RBCs) by hemolysis method, and human skin fibroblast cells (Ffk) by MTT method were performed. thymol/ceftazidime and thymol/ampicillin (A1, and A1 compounds) had Synergistic effects. Finally, the results of the tests were compared between the two compounds.
Result: The antimicrobial effects of the thymol/ceftazidime (16/8 µg/ml) were better than the thymol/ampicillin (8/2 µg/ml) in both clinical and ATCC strains. In the examination with the FTIR device, both compounds had bonds of OH carbohydrates proteins, polyphenols, C=O Amide I band, C-O-Cpolysaccharide, C-Namide III band, but one band named C=C conjugated, C≡C in both compounds showed the connection between thymol/ceftazidime and thymol/ampicillin. The biofilm inhibition effects of thymol/ceftazidime (75.51%) were better than thymol/ampicillin (62%) on *E. coli* ATCC25922 bacteria. The bacterial killing time curve of the thymol/ceftazidime at a lower concentration and time was better than the thymol/ampicillin. Cytotoxicity of synergistic compounds on RBCs and human Ffk cells was not different and was lower than that of Triton X-100.
Conclusion: The thymol/ceftazidime in this study demonstrated stronger antibacterial, anti-biofilm, and bacterial killing time effects than the thymol/ampicillin, which is not surprising given the antibiotic resistance of ceftazidime and ampicillin drugs in the treatment of disorders caused by *E. coli* bacteria. After more research, this combination may be prescribed to patients as a novel medication.

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Comparative Synergistic Interactions between Thymol/Ceftazidime and Thymol/Cefotaxime on Escherichia coli Bacteria

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ARTICLEINFO

Posters

Keywords:
Escherichia coli,
Thymol, Cefotaxime,
Ceftazidime,
Antimicrobial

ABSTRACT

Introduction: This study aimed to compare the antimicrobial effects of thymol/ceftazidime with thymol/cefotaxime on *E. coli* bacteria.
Material and Methods: Antimicrobial effects of thymol/ceftazidime and thymol/cefotaxime were performed first individually and then combined on E. coli ATCC25922 by the MIC-MBC method. Therefore, the antimicrobial effects of the compounds that had synergistic effects were performed on twenty clinical strains using the MIC-MBC method. Identification of chemical bonds, functional groups, and molecular interactions of the mentioned compounds were investigated with an FTIR device. Checkered method, time killing curve, and biofilm inhibition on E. coli ATCC25922, investigation of cytotoxicity on red blood cells (RBCs) by hemolysis method and human skin fibroblast cells (Ffk) by MTT method were performed. Thymol/ceftazidime and thymol/cefotaxime had Synergistic effects. Finally, the results of the tests were compared between the two compounds.
Results: The results of this study showed that the antimicrobial effects of the thymol/ceftazidime (16/8 µg/ml) were better than the thymol/cefotaxime (128/16 µg/ml) in both clinical and ATCC strains. In the examination with the FTIR device, both compounds had bonds of OH carbohydrates proteins, polyphenols, C=O Amide I band, C-O-Cpolysaccharide, C-Namide III band, but one band named C=C conjugated, C≡C in both compounds showed the connection between thymol with ceftazidime and cefotaxime. The biofilm inhibition effects of thymol/ceftazidime (75.51%) were better than thymol/cefotaxime (39.28%) on *E. coli* ATCC25922. The bacterial killing time curve of the thymol/ceftazidime at a lower concentration and time was better than the thymol/cefotaxime. Cytotoxicity of synergistic compounds on RBCs and human Ffk cells was not different and was lower than that of Triton X-100.
Conclusion: Considering the antibiotic resistance of ceftazidime and cefotaxime in the treatment of diseases caused by E. coli bacteria, the thymol/ceftazidime in this study showed better antimicrobial, anti-biofilm and bacterial killing time effects than the thymol/cefotaxime. This combination can be used as a new drug in patients after further studies.

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Compare the Amount of D-Dimer, Inflammatory Factors Including CRP, And Liver Enzymes in Hospitalized Patients of Mashhad COVID-19 in Two Peaks

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ARTICLEINFO

Posters

Keywords:
COVID-19, Inflammatory factors, D-dimer, CRP, Liver enzymes

ABSTRACT

Introduction: The status of COVID-19 in peak 4 (alpha variant) and peak 5 (delta variant) can show the prognostic difference of patients with alpha and delta strains and provide the ability to predict the behavior of the strains in the next probable waves. Therefore, the present study was conducted in order to compare the amount of D-dimer, inflammatory factors including CRP, and liver enzymes in hospitalized patients of Mashhad COVID-19 in two peaks.

Materials and Methods: This cross-sectional study was conducted on all hospitalized COVID-19 patients during the peaks 4 and 5 of the disease. The information related to the studied variables including D-dimer, CRP and liver enzymes and background information including age, gender and hospitalization date to define the peak were extracted from the electronic files of the patients. Finally, the obtained information was analyzed by SPSS statistical software.

Results: Totally 5751 patients with mean age of 58.92 ± 17.69 years were included in the study, of which 2975 patients (51.7%) were male and 2776 patients (48.2%) were female. The gender composition of the two groups (peak group 4 and peak group 5) was similar to each other, while the age of patients in peak 4 was significantly higher than peak 5 (p0.001). In the fourth peak, the CRP level was significantly higher than the fifth peak (p0.001) and the ALT level was significantly lower than the fifth peak (p=0.042). However, in other cases, there was no significant difference between the two peaks. ALT level was significantly higher in male patients than in female patients (p=0.015), but no significant difference was observed in other laboratory factors between the two genders.

Conclusion: Based on the results obtained in the present study, in the fifth peak, the CRP level has decreased. This can be due to updating treatment protocols and improving the level of medical services. However, ALT levels was elevated in peak 5, indicating more liver damage that can be due to systemic inflammation, direct viral cytopathic effects, and drug-induced hepatotoxicity.

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Comparing the Antimicrobial, Anti-Biofilm, and Cytotoxic Effects of Thymol/Ampicillin and Thymol/Cefotaxime against Escherichia coli Bacteria

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ARTICLEINFO

Posters

Keywords:
Escherichia coli, Thymol, Cefotaxime, Ampicillin, Anti-biofilm, Antimicrobial

ABSTRACT

Introduction: This study aimed to compare the antimicrobial, anti-biofilm, and cytotoxic effects of thymol/ampicillin with thymol/cefotaxime on Escherichia coli (E. coli).

Material and Methods: Antimicrobial effects of thymol/ampicillin and thymol/cefotaxime were first individually and then combined on E. coli ATCC25922 by MIC-MBC method. Therefore, the antimicrobial effect of compounds that had synergistic effects was performed on twenty clinical strains using the MIC-MBC method. Identification of chemical bonds, functional groups, and molecular interactions of the mentioned compounds were investigated with an FTIR device. Checkered method, time killing curve, and biofilm inhibition on E. coli ATCC25922 bacteria, and investigation of cytotoxicity on red blood cells (RBCs) by hemolysis method and human skin fibroblast cells (Ffk) by MTT method were performed. thymol/ampicillin and thymol/cefotaxime (A1, A3 compounds) had Synergistic effects. Finally, the results of the tests were compared between the two compounds.

Results: The results of this study showed that the antimicrobial effects of the thymol/ampicillin 2/8) µg/ml) were better than the thymol/cefotaxime 16/128) µg/ml(in both ATCC and clinical strains. In the examination with the FTIR device, both compounds had bonds of OH carbohydrates proteins, polyphenols, C=O Amide I band, C-O-Cpolysaccharide, C-Namide III band, but one band named C=C conjugated, C≡C in both compounds showed the connection between thymol/ampicillin and thymol/cefotaxime. The biofilm inhibition effect of thymol/ampicillin (62 %) was better than thymol/cefotaxime (39.28 %) on E. coli ATCC25922. The bacterial killing time curve of the thymol/ampicillin at a lower concentration and time was better than the combination of thymol/cefotaxime. Cytotoxicity of synergistic compounds on RBCs and human skin fibroblasts (Ffk) was not different and was lower than that of Triton X-100.

Conclusion: Considering the antibiotic resistance of ampicillin and cefotaxime in the treatment of diseases caused by E. coli bacteria, the thymol/ampicillin in this study showed better antimicrobial, anti-biofilm, and bacterial killing time effects than the thymol/cefotaxime. This combination can be used as a new drug in patients after further studies.

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Comparing the Effects of Deep and Surface Aeration Methods on Density and Type of Airborne Bactria and Fungi in Municipal Wastewater Treatment Plant

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ARTICLEINFO

Posters

Keywords:
Wastewater treatment plant, Surface aeration, Deep aeration, Bioaerosol

ABSTRACT

Introduction: One of the important problems in the field of water and wastewater treatment is the investigation of microbial air pollution and the release of suspended particles due to wastewater treatment. Harmful microorganisms in wastewater include different types of bacteria, fungi, etc.

Materials and Methods: For this purpose, two wastewater, Khein-Arab and Parkand-Abad, which use deep and surface aeration processes, were studied. Sampling was conducted seasonally with a minimum distance of one meter from barriers and at a height of 1.5 meters above ground level at both wastewaters. Nutrient agar, McConkey agar and Subrodextrose agar were used for environmental sampling, total samples was 400. Then intercropping was done to identify bacteria and fungi species. Analysis of results was carried out using SPSSMODELER18 and RAWGraphs software.

Results: Mean values for density of bacterial was reported 26.98 CFU/plate at Khein-Arab and 26.11 CFU/plate at Parkand-Abad. Mean values for density of fungi was reported as 4.71 CFU/plate at Khin-Arab treatment plant and 4.40 CFU/plate at Perkand-Abad. Bacterial pollution, except during the spring, was higher at Khein-Arab compared to Parkand -Abad. The process of fungal pullotion trend was similar between the two treatment plants, with no statistically significant difference observed.

Conclusion: The two treatment plants have behaved almost the same in terms of the amount of pollution in the total sampling seasons, which can be influenced by various factors such as: the larger size of the Khin Arab treatment plant, more polluted units in the Khin-Arab treatment plant, and the difference in aeration systems.

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Comparison of Detecting SARS-CoV-2 in Nasopharyngeal Swabs, and Stool Specimens of Hospitalized Children with COVID-19 in Mofid Children's Hospital

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ARTICLEINFO

Posters

Keywords:
COVID-19, Stool sample, RT-PCR test

ABSTRACT

Introduction: In most patients, the ability to detect SARS-CoV-2 in the upper respiratory tract ceases after 2 to 3 weeks post-symptom-onset in contrast, SARS-CoV-2 can be detected in the stool of some patients for more than 4 weeks, suggesting that stool may hold utility as an additional source for diagnosis. According to the results of studies in other countries regarding the diagnostic role of fecal PCR in patients with COVID-19, especially with gastrointestinal manifestations, we decided to perform a COVID-19 RT-PCR test on fecal samples in patients with gastrointestinal manifestations.

Materials and Methods: In this cross-sectional study, 105 stool samples were obtained from children aged 1 month to 15 years with gastrointestinal symptoms suspected to be COVID-19, who were referred to Mofid Children's Hospital for RT-PCR testing of COVID-19. After total RNA extraction of stool samples and nasopharyngeal swabs sample, an RT-PCR test of COVID-19 was performed by specific primer probes, and the results were investigated.

Results: From 105 samples 60% was related to female and 40% of them related to male, respectively. The mean age was 2.64± 3.44 years (5 months to 14 years old). the most symptom was fever and Diarrhea. The 35% of patients had positive stool PCR. The results of GI vs. upper respiratory samples PCR show in table1. The RNA of SARS-COV2 was detected in the 18% of patient stool samples but not detected in their nasopharynx samples.

Conclusion: since 42.8% of patients were confirmed as positive COVID-19 by RT-PCR on their stool samples, taking a stool sample for a COVID-19 test in children with GI manifestation is very important. also, the concentration of ACE2 receptors in the children's digestive system is higher than in adults, and gastrointestinal manifestations become very important. if the criteria for admitting children in a clean ward is only the result of nasopharyngeal PCR, it will cause hospitalization of children with COVID-19 with digestive symptoms and negative nasopharyngeal test results in clean wards of the hospital.

Keywords:

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Construction of Cell Model Infected with HTLV-1 Virus and Disruption of Gag Gene by CRISPR/Cas9 System

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ARTICLEINFO

Posters

Keywords:
HTLV-1, Gag gene, Transposon system, CRISPR/Cas9, HITI

ABSTRACT

Introduction: Human T-cell leukemia virus type 1 is a lentivirus that belongs to the retroviridae family. The Khorasan province was reported to be as one of the endemic regions. Infection with HTLV-1 can lead to asymptomatic carrier state or two diseases including ATLL and HAM/TSP. The retroviral Gag protein is the critical structural protein that orchestrates particle assembly, release, and maturation to create an infectious virus. Interference with the structure of the gag leads to disruption of the assembly of the virus, which can be an attractive antiviral target for treatment.HTLV-1 currently, cannot be treated with antiviral drugs. The recent advent of genome-editing technologies has enabled a new approach. In this study, we used CRISPR/ Cas9 technology to manipulate the gag gene to disrupt this important gene in HTLV-1 virus assembly.

Materials and Methods: In this study, the HEK 293T cell line was used to construct an HTLV-1 gag-infected cell . For this purpose, Gag gene from genomic DNA of MT-2 cells was amplified and cloned into transposon vector and transfected to HEK 293T.The presence of the transposon vector containing gag gene in the HEK 293Tcell line was confirmed by Fluorescent microscope, PCR, digestion with restriction enzyme and sequencing. Function of gag gene was evaluated by RT-PCR. In the next step, we designed sgRNA against Gag gene and cloned into Cas9 vector. This vector with second vector containing DsRed and Poly A, transfected to cellular model. In this study, gag gene disruption occurred with HITI-based CRISPR/Cas9 method.

Results: The correct integration of the gag gene into the cell genome was confirmed by fluorescent microscope. The correct size of the PCR band was found to confirm the presence gag gene. In addition, the sequencing results showed that transfection was performed correctly. The disruption of gag was confirmed by fluorescent microscope which showed that the vector is inserted in the cell model. PCR was also performed to evaluate the correct integration of the second vector at the beginning of the gag gene. Finally, the sequencing results also showed that the knock in was done correctly.

Conclusion: Finally, we succeeded in using the CRISPR/Cas9 technique to destroy the HTLV-1 virus gag gene structure, which plays a key role in the assembly of HTLV-1 virus.

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Cough Assist Machine in Preventing Pneumonia in Burn Patients

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ARTICLEINFO

Posters

Keywords:
Cough assist machine, Pneumonia, Burn patients, Cough

ABSTRACT

Nosocomial pneumonia, particularly pneumonia of the lungs, refers to an infection that develops after a patient is admitted to the hospital, especially during stays in intensive care units (ICU) or with the use of ventilators (mechanical ventilation). This infection is typically caused by the entry of bacteria, viruses, or fungi into the lungs. A key feature of hospital-acquired pneumonia is that it generally occurs after 48 hours of hospital admission, surgery, or other medical interventions. It often involves antibiotic-resistant bacteria such as methicillin-resistant Staphylococcus aureus (MRSA), Pseudomonas aeruginosa, and Klebsiella. Symptoms include fever, cough, shortness of breath, chest pain, and sputum production. Prompt treatment with appropriate antibiotics, based on the type of bacteria and their drug sensitivities, is crucial. Prevention strategies, such as maintaining proper hygiene and minimizing ventilator use, are also effective in reducing the risk of infection. Preventing and managing this type of pneumonia requires vigilant care and continuous monitoring in hospital settings. In pneumonia, inflammation and infection of lung tissue can lead to the accumulation of fluid and secretions. Normally, the immune system works to eliminate these secretions, but patients with severe burns may experience serious respiratory complications, including respiratory distress. In such cases, damage to the lungs and other respiratory structures can exacerbate breathing difficulties. A cough-assist device, used as part of lung physiotherapy, can play a critical role in improving respiratory function in burn patients with compromised breathing. By applying air pressure, the device helps stimulate airflow and enhance the effectiveness of the patient's cough, facilitating the removal of pulmonary secretions and improving overall airway clearance and breathing.

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CRISPR Technology for Methicillin-Resistant Staphylococcus Aureus Detection: A Systematic Review and Meta-analysis of Diagnostic Accuracy

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ARTICLEINFO

Posters

Keywords:
CRISPR-Cas Systems;
Meta-Analysis;
Sensitivity and specificity;
Staphylococcus aureus

ABSTRACT

Introduction: Methicillin-resistant *Staphylococcus aureus* (MRSA) infections have become a significant public health concern, and rapid and accurate detection methods are needed for effective treatment. Clustered regularly interspaced short palindromic repeats (CRISPR) technology, which can target and break down foreign genetic material, has a lot of potential as a diagnostic tool for finding MRSA because it is very sensitive and specific. We aimed to evaluate the diagnostic accuracy of CRISPR-based diagnostic tools for MRSA detection.

Materials and Methods: Following PRISMA guidelines, a thorough search was carried out in Medline, Scopus, Embase, and ISI Web of Science to obtain pertinent studies. Using the Joanna Briggs Institute checklist, quality was evaluated. R 3.4.1 was used for data analysis, including subgroup analyses, looking at variables such as CRISPR variants, gene targets, pre-amplification strategies, and signal readout techniques.

Results: Nine of the 336 identified studies were found to meet the inclusion criteria and included 332 MRSA strains. CRISPR-based methods yielded pooled sensitivity and specificity values of 0.99 (95%CI: 0.96-1.00) and 0.99 (95%CI: 0.67-1.00), respectively. The diagnostic accuracy was indicated by the pooled diagnostic odds ratio of 323.0598 (95%CI: 94.0929-1109.1978) and the AUC of 0.98 in the SROC curve. Subgroup analyses revealed differences in diagnostic metrics according to target gene, pre-amplification techniques, and the CRISPR variant used. The sensitivity and specificity of CRISPR-Cas12, for example, were 0.99 (95%CI: 0.96-1.00) and 0.99 (95%CI: 0.74-1.00), respectively. Moreover, pre-amplification with RPA yielded results of 0.99 (95%CI: 0.95-1.00) and 1.00 (95%CI: 0.00-1.00), respectively.

Conclusion: For the detection of MRSA, CRISPR-based techniques show outstanding diagnostic sensitivity and specificity, with significant differences between CRISPR variants and methodological approaches. These results highlight the promise of CRISPR as an MRSA diagnostic tool, with potential for enhancement in a variety of clinical and research contexts.

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Cytomegalovirus Prevention in Liver Transplant Recipients: A Comparative Study of Universal and Preemptive Strategies with Valganciclovir

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ARTICLEINFO

Posters

Keywords:
Mycobacterium tuberculosis, Tuberculin, Blood Culture, Epstein - Barr virus Infections, Graft Rejection, Immunoglobulin G, Hemoglobins, Bilirubin

ABSTRACT

Introduction: Universal prophylaxis and preemptive therapy have been utilized to prevent and treat cytomegalovirus (CMV) infection in post-transplant cases, respectively. This study aimed to compare universal prophylaxis with valganciclovir to preemptive treatment in liver transplant recipients.

Materials and Methods: This retrospective cross-sectional study was conducted between 2013-2021, on patients received valganciclovir after liver transplantation in Mashhad, Iran. Patients were categorized into: 1. Universal (n=170), 2. Preemptive treatment (n=305), using an available sampling method.

Results: There was no significant difference in CMV infection between the groups. Preemptive group had greater average age at transplantation than universal group (P0.05). The CMV immunoglobulin G (IgG) test showed a strong connection in both groups (P0.05). The mean of hemoglobin and total bilirubin differed between groups (P0.05). No significant statistical relationship was found between gender, graft rejection, time of CMV infection, patients' discharge status, personal satisfaction, death, cause of death, type of concurrent opportunistic infection, Epstein-Barr virus IgG and polymerase chain reaction (PCR), Mycobacterium tuberculosis PCR, purified protein derivative (PPD), and blood culture test result.

Conclusion: Both treatment methods are equally effective in preventing CMV disease, graft rejection, CMV infection rates, and the overall status of liver transplant recipients in terms of discharge, death, and opportunistic infections.

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Death of a Patient due to Steven Johnson Syndrome Because of Inappropriate Administration of Penicillin

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ARTICLEINFO

Posters

Keywords:
Steven Johnson,
Penicillin, Medical error

ABSTRACT

Introduction: A 13-year-old girl goes to the doctor with a sore throat, runny nose and fever. The doctor prescribes penicillin to the patient due to the insistence of the parents who claim that she will not get well without penicillin. In the course of the disease, the body becomes red, especially the palms and the mucous membrane of the gums. The eyes are dry. Lung problems worsen. she is hospitalized with an unfavorable general condition. The patient is treated with the diagnosis of Steven Johnson syndrome. Unfortunately, she dies after a few days.

Materials and Methods: The initial symptoms of Stevens-Johnson are very simple and may be confused with a simple cold at first, and this is the reason for the development of this disease in many cases. In this patient, the diagnosis of a cold has been raised from the beginning. Therefore, the patient's symptoms are still related to a common cold.

Results: In this patient, the doctor has committed medical errors and negligence in the form of 1- Carelessness, Something was not necessary, was done (prescribe penicillin for common cold) 2- failure to comply with government regulations. (Accepted advice of non-involved and not expert)

Conclusion: The doctor should consider scientific and technical principles in prescribing medicine. The patient's or parents' insistence and request for a special drug or test has no place. In the above patient, the initial symptoms were in favor of a viral infection. Penicillin administration is not indicated. The cause of her death was Steven Johnson syndrome due to improper administration of penicillin.

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Decoding Cardiovascular Markers Links to ICU Admission and Mortality in COVID-19

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ARTICLEINFO

Posters

Keywords:
COVID-19,
Cardiovascular system,
Mortality, Stroke,
Pulmonary
thromboembolism

ABSTRACT

Introduction: This study investigates cardiovascular complications in COVID-19 patients hospitalized at Shahid Faghihi Hospital and examines the correlation of these complications with ICU admission and mortality.

Materials and Methods: A retrospective analysis was conducted on 216 randomly selected COVID-19 patients admitted to Shahid Faghihi Hospital. Patient records were evaluated for laboratory findings, electrocardiography, echocardiography, and cardiovascular complications. Data analysis was performed using SPSS software.

Results: Among the 216 patients, 89 (41.2%) were male, and 127 (58.8%) were female, with an average age of 61.56 years. Key findings include: *ICU Admission* Patients requiring ICU admission were older and had elevated levels of lactate dehydrogenase (LDH) and D-dimer- *Mortality* Deceased patients had higher LDH and D-dimer levels compared to recovered patients. They were also more likely to have positive troponin levels. *Cardiovascular Complications* Deceased patients exhibited more non-specific ST-T segment changes, atrial fibrillation, right bundle branch block, rightward deviation of the heart's electrical axis, elevated ST segment, pericardial effusion, pleural effusion, and segmental pulmonary thromboembolism. *Protective Factors* Normal electrocardiography (ECG) was associated with a protective effect against ICU admission.

Conclusion: COVID-19 patients can experience significant cardiovascular complications, including myocarditis, stroke, and pulmonary thromboembolism, which contribute to increased morbidity and mortality. Therefore, cardiovascular monitoring for COVID-19 patients is crucial.

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Delineation of the Seasonal Pattern of Measles in One-Year Period in Akbar Children's Hospital

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Posters

Keywords:
Measles, Child, Seasonal pattern

ABSTRACT

Introduction: The dominant epidemiological pattern of measles is that it peaks in winter and multi-peaks in other seasons, but with less incidence. The mechanism of this occurrence pattern is still debated. Some researchers believe that the cause of these changes is the changing nature of the virus itself, but some emphasize the change in environmental conditions and exposure such as school and holidays. The current study intends to investigate the pattern of seasonal changes of measles disease in a one-year period, in Mashhad, Iran.
Materials and Methods: The population of this study is children with measles. The sample size includes 37 children who were admitted to Akbar Children's Hospital between April 1402 and May 1403 with the possibility of measles. Sampling was done in the form of a census among children suspected of having measles, who had been tested for measles PCR. The data collection tool was patient file documentation. Statistical analysis was done using SPSS 21 software.
Results: The obtained results show a winter peak and a summer peak. The disease was at its minimum occurrence in autumn and spring and at its maximum occurrence in summer and winter. Quarterly results and monthly reports are given in tables and graphs.
Conclusion: As it can be seen, at one point of time of one year, the most measles diagnosis in the hospital was in the winter and summer seasons. The winter peak in the epidemiological pattern of measles is a common and accepted phenomenon. But the summer peak is not a common phenomenon. It is suggested to carry out more investigations and to identify the etiology of this event by considering a longer time pattern. The etiology of events plays an important role in breaking the disease chain.

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Demographic and Clinico-Radiologic Comparison of Urinary Tract Infections with and without Nephrolithiasis

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ARTICLEINFO

Posters

Keywords:
UTI, Urinary stone , Children, Hydronephrosis, Etiology, Pyelonephritis

ABSTRACT

Introduction: Urinary stones can cause urinary infection through urinary stasis. We aimed to compare demographic characteristics, form and etiologies of UTIs, and clinic-radiologic characteristics in UTIs presented with and without urinary stones.

Materials and Methods: A retrospective study was conducted on children ≤ 18 years from April 2006 to March 2023 with a definitive diagnosis of UTI. The study was performed in the nephrology clinic of Dr. Sheikh Children's Hospital or nephrology office. Patients with anatomical urinary obstruction, neurogenic bladder, cystic kidney diseases, and stage 3 to 5 chronic kidney disease were excluded from the study. Enrolled cases were divided into groups with and without urinary stones.

Results: Of 599 children included in the study, 518 were girls (86.5%) and 81 were boys (13.5%). The median age was 27 months. In total, 403 (67.3%)cases did not have and 196 (32.7%) had urinary stones at presentation. The frequency of male gender was significantly higher in the group with versus those without stone (18.4% compared to 11.2% respectively, P=0.016). The median age at presentation in patients with and without urinary stones was 22.5 and 45 months, respectively (P0.001). Dilatation in the urinary system was reported in 34.2% of cases with and 22.6% of patients without stones (P=0.002). Vesicoureteral reflux (VUR) was significantly more prevalent in cases without than those with stones (57.6% compared to 28.3%, respectively, P=0.007). Acute pyelonephritis as the primary manifestation of UTI was significantly more common in patients without than those with stones (51% compared to 61.3% respectively, P=0.012). Recurrence of UTIs at three months or longer follow-up was significantly higher in patients without than those with stones (43.3% compared to 30.9%, respectively, P=0.022). There was no significant difference in the prevalence of *Escherichia coli* compared to non-*Escherichia coli* UTIs between the two groups (P values: 0.05).

Conclusion: Children with UTIs who have urinary stones are different from those without in terms of demographic characteristics, presentation as febrile infections, dilatation of the urinary system in kidney ultrasound, having VUR, and recurrence of UTIs in short-term follow-up. However, the etiologies of UTIs are not significantly different between them.

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Detection of Extensively Drug-Resistant Staphylococcus Aureus Causing Conjunctivitis by Artificial Intelligence

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ARTICLEINFO

Posters

Keywords:
Staphylococcus aureus, Artificial Neural Network, Antibiotics, Conjunctivitis

ABSTRACT

Introduction: *Staphylococcus aureus* is one of the most common causes of bacterial conjunctivitis. The Artificial Neural Networks (ANNs) model can support the authorities in making proper prescriptions in a significantly shorter time frame, facilitating a more accurate treatment procedure while saving budget and required medical staff. This study investigated whether artificial intelligence can improve the detection of extensively drug-resistant (XDR) S. aureus isolates from inpatients and outpatients with conjunctivitis.

Material and Methods: After isolation of *S. aureus* using standard phenotypic, microbiological, and molecular detection (PCR) methods from one-hundred-fifty patients (age range: 11 months-74 years) during 2022-2024, XDR *S. aureus* isolates were identified using microdilution broth test against 13 antimicrobial agents included in 8 antimicrobial categories according to the Clinical and Laboratory Standards Institute M100 guidelines (2021). ANNs model was trained using a portion of in vitro datasets (i.e. train set) considering different characteristics of clinical isolates recorded for each isolate in the dataset. Finally, the ANN model was used to predict the AMR class of the laboratory dataset (i.e. test set) and results were compared with existing data to figure out the accuracy of ANN model predictions.

Results: The frequency of ocular XDR *S. aureus* isolates (31 %) was significantly higher in spring, females, and patients aged 30-52 years (P0.05). Among the XDR isolates causing conjunctivitis, the highest rates of resistance and sensitivity were observed against tetracycline (42.85%) and linezolid (89 %), respectively. *Staphylococcus aureus* may be the most common cause of bacterial conjunctivitis depending on the season and age group and the ANNs model can predict the classification of the remaining test data set with approximately 90% accuracy.

Conclusion: This measure can contribute to the prevention of the overuse and also incorrect use of antimicrobial agents to combat rising resistance rates of *S. aureus* by focusing on wider variety of potentially effective parameters on the required dose of antimicrobial agents.

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Development of a Closed-Loop Biocompatible Biopolymer Patch for Real-Time Detection and Prevention of Chronic Wound Infections

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ARTICLEINFO

Posters

Keywords:
Chronic, Wound, Infections, Biocompatible, Biopolymer

ABSTRACT

Introduction: Chronic wound infections are a growing concern due to their prolonged healing times and risk of developing into life-threatening conditions. The integration of biopolymer-based wound dressings with biosensors offers a cutting-edge solution for real-time infection monitoring and prevention. This systematic review examines the current progress toward developing closed-loop, biocompatible wound dressings that detect infections and deliver targeted treatment.
Materials and Methods: A literature search was performed in databases including PubMed, Scopus, and Google Scholar for studies published between 2011 and 2023. Keywords included "closed-loop wound dressing," "biopolymer," "infection detection," and "biosensor." Inclusion criteria were studies that reported on biocompatible wound dressings with integrated sensors for infection detection and prevention.
Results: Closed-loop biopolymer dressings demonstrated enhanced wound healing due to their ability to detect infection via pH changes and other biochemical signals. Once an infection was detected, the dressings responded by releasing antimicrobial agents embedded in the biopolymer matrix. Studies showed that these dressings were highly effective in preventing bacterial colonization, especially in chronic wound environments, and in delivering sustained antimicrobial therapy.
Conclusion: The development of closed-loop, integrated biopolymer wound dressings offers a promising solution for managing chronic wound infections. These smart dressings not only detect the early onset of infection but also respond with precise antimicrobial intervention, improving patient outcomes

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Differential Hemodynamic Responses and Clinical Outcomes in COVID-19 and Sepsis Patients: A Prospective Study

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ARTICLEINFO

Posters

Keywords:
Picco ,Covid-19, Septic shock

ABSTRACT

Introduction: Hemodynamic monitoring plays a vital role in caring for critically ill pediatric patients. By closely and accurately tracking their cardiovascular status, clinicians can make well-informed decisions about treatments, especially when patients need hemodynamic support through fluids or inotropic medications. The PiCCO (Pulse Contour Cardiac Output) device provides detailed hemodynamic parameters for managing such patients. This study aims to leverage PiCCO device data, to predict important factors affecting patient outcomes, such as cardiac index normalization time within 24 hours and the optimal inotropic regimen for individual patients.

Materials and Methods: This retrospective cross-sectional study includes pediatric patients admitted to the ICU at Amir Hospital in Shiraz, Iran, who were between 2 and 17 years old and had undergone invasive hemodynamic monitoring. Data were collected from PiCCO device recordings of 14 critically ill patients, with medical records reviewed for demographic details, lab results, complications, and prognosis. All data were then analyzed using SPSS software, version 23 and python.

Results: The study observed statistically significant differences between several hemodynamic parameters on admission and at the final measurement. Mean Arterial Pressure improved significantly ($p = 0.013$), and Extra-vascular Line Water Index showed a notable reduction ($p = 0.021$). Stroke Volume Variance decreased significantly ($p = 0.001$), as did Pulse Pressure Variance ($p = 0.002$). There was a significant difference in the length of hospitalization between survivors and non-survivors ($p = 0.024$), with COVID-19 patients having shorter stays compared to sepsis patients. However, no significant differences were found in time intervals related to PICU admission, intubation, or the presence of complications. Vasopressin use was linked to significant changes in Cardiac Index ($p = 0.008$) and Systemic Vascular Resistance Index ($p = 0.019$), with a distinct difference in its application between COVID-19 and sepsis patients ($p = 0.016$).

Conclusion: Significant improvements were observed in key measures such as Mean Arterial Pressure, Extra-vascular Line Water Index, Stroke Volume Variance, and Pulse Pressure Variance, showing that careful monitoring can lead to better patient outcomes. While COVID-19 patients had shorter hospital stays than those with sepsis, there were no notable differences in PICU admission or intubation times between groups.

Keywords:

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Distribution of Group A Rotavirus Circulating in Mashhad, Iran

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ARTICLEINFO

Posters

Keywords:
Rotavirus, Children, Prevalence, Epidemiology, Diarrhea.

ABSTRACT

Introduction: Group A Rotavirus (RVA) is the most important causative agent of acute diarrheal disease in pediatrics 5 years and below. This study aimed to determine the distribution of circulating RVA in Mashhad, Iran to develop health improvement strategies and vaccine decision making.

Materials and Methods: A total of 106 fecal specimens were collected from children admitted to Akbar and Dr. Sheikh referral pediatric hospitals of Mashhad City during the December 2020 to March 2021 and December 2021 to March 2022. All specimens were tested for specific bacterial, parasitic, and amoebic infections. Negative samples were analyzed for RVA infections using the RT-PCR method.

Results: RVA was detected in 31.3% of the specimens, indicating no statistical significance in gender distribution or between fall and winter positivity rates. The number of RVA–positive specimens increased following age increasing in the range of 1 to 60 months.

Conclusion: Today, acute diarrheal disease (ADD) is still caused mostly by Rotavirus infections in pediatrics in Mashhad. Comprehensive studies are needed to determine the genetic diversity of circulating Rotavirus strains in this era.

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High Prevalence of Coronavirus NL63 in SARS-CoV-2 Negative COVID-19 Suspected Patients

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Posters

Keywords:
Coronavirus NL63, SARS-CoV-2, Influenza A virus, Co-infection.

ABSTRACT

Introduction: From the beginning of the COVID-19 pandemic to date, we had more than seven waves of the disease in Iran. However, we had many patients with symptoms of covid-19 while the rt-PCR test was negative. By further evaluating of the patient's record, we found that the patients' symptoms were similar to those of viral pneumonia rather than bacterial. So, we decided to examine the presence of some important respiratory pathogenic viruses.

Materials and Methods: In last months, along with the decrease in the number of positive cases of Covid-19 after third wave of the disease in North Khorasan, because of the patients' symptoms, we examined a panel of respiratory viruses in 10 Covid-19 suspected SARS-CoV-2 negative patients. The studied viruses were included influenza A virus, Coronaviridae (229E, HKU1, NL63, OC43), rhinoviruses, metapneumovirus, bocavirus, RSV, and parainfluenza virus.

Results: Of 600 evaluated samples, 409 cases were negative, and 191 were positive for evaluated viruses. 126 out of 191 positive tests were NL63 coronavirus, and 28 samples were positive for influenza A virus. We also had positive samples for OC43 coronavirus, Rhinoviruses, Metapneumovirus, Bocavirus, and Respiratory Syncytial Virus. All Rhinovirus and Metapneumovirus positive cases belonged to 0–14 years old patients, and also all OC63 Coronavirus, and RSV isolates were isolated from more than 60 years old patients, and Bocavirus just found in the 46–60 years old group. NL63 Coronavirus was seen in all age ranges, and bilateral pneumonia was the most frequent finding in CT scan evaluation. 229E and HKU1 Coronaviruses, Bocavirus and RSV didn't have any CT scan findings. It should be noted that Ground glass opacity was just seen in NL63-positive patients.

Conclusion: In some previous papers, researchers mentioned a similar mechanism of cell entrance for coronavirus NL63 and SARS-CoV. They found that both of these viruses using the ACE-2 receptor (3, 4). One of the reasons for the decline in Covid-19 positives in recent days may be the winning of coronavirus NL63 over SARS-CoV-2 in connection with the ACE-2 receptors.

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Dual Role of Microorganisms in Neurodegenerative Diseases: Pathogenesis and Therapeutic Potential

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ARTICLEINFO

Posters

Keywords:
Neurodegenerative diseases, Microorganisms, Pathogenesis, Therapeutic carriers, Alzheimer's disease, Parkinson's disease, Microbiome

ABSTRACT

Introduction: Neurodegenerative diseases (NDs), such as Alzheimer's disease, Parkinson's disease, and multiple sclerosis, have become a significant health concern worldwide. Recent studies suggest that microorganisms may play a dual role in the progression or mitigation of these diseases, either as contributing factors to neuroinflammation or as potential carriers for therapeutic interventions. This systematic review aims to evaluate the role of microorganisms, both pathogenic and beneficial, as carriers or active agents in the development, progression, and treatment of neurodegenerative diseases.

Materials and Methods: A systematic literature search was conducted across multiple databases, including PubMed, Scopus, Web of Science, and Cochrane Library, from inception to September 2024. Search terms included combinations of "microorganisms," "neurodegenerative diseases," "carriers," "therapy," "pathogenesis," and specific disease names. Inclusion criteria were clinical and preclinical studies that explored the direct or indirect roles of microorganisms in NDs. Articles were screened independently by two reviewers, and data on the mechanisms of microorganism involvement, outcomes on neurodegeneration, and therapeutic efficacy were extracted and analyzed. The PRISMA guidelines were followed in the execution of the review.

Results: Out of 1200 initial studies, 75 met the inclusion criteria. The review identified three major ways microorganisms interact with NDs: (1) pathogenic microorganisms, such as Helicobacter pylori, *Porphyromonas gingivalis*, and *Chlamydia pneumoniae*, are implicated in disease progression through mechanisms like inflammation and amyloid plaque formation; (2) probiotic and engineered microorganisms have shown promise as carriers for delivering neuroprotective agents across the blood-brain barrier; (3) microbial metabolites, such as short-chain fatty acids and bacterial lipopolysaccharides, influence neuroinflammation and cognitive function, either exacerbating or alleviating symptoms depending on the species involved.

Conclusions: The role of microorganisms in neurodegenerative diseases is complex, with evidence supporting both harmful and therapeutic effects. Pathogenic microbes appear to contribute to disease progression through inflammatory pathways, while certain probiotics and engineered microorganisms offer a novel avenue for therapeutic interventions. Further research is needed to fully elucidate these mechanisms and develop microbial-based therapies for NDs.

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Effect of Climatic Factors on Hepatitis B Occurrence in a Cross-Sectional Study in Southwest Iran

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ARTICLEINFO

Posters

Keywords:
Hepatitis B, GIS, Climate

ABSTRACT

Introduction: Climatic characteristics and various weather factors have direct or indirect impacts on human health and hygiene. Exploring how human health is affected by climatic factors and weather conditions can elucidate these hidden angles. Hepatitis B virus that chiefly transferred through blood or sexual contacts is one such case that may be directly or indirectly influenced by these factors. The purpose of this study is to determine the impact of weather factors on the prevalence of hepatitis B, especially in Kohgiluyeh and Boyer Ahmad province, southwest Iran.

Materials and Methods: Hepatitis B patient residential addresses for a ten years period from 2013 to 2022 were collected from the provincial health center. The effects of factors including mean annual rainfall, mean sunny days, and mean annual freezing days on disease occurrence were analyzed and examined using geographic information systems (GIS). Finally, statistical analysis of the data was performed using univariate regression method.

Results: According to the findings of this research, an inverse relationship with disease occurrence, was found for rainfall while a direct relationship between the number of sunny days and disease occurrence was observed. The number of freezing days had no effect on the disease distribution.

Conclusion: it seems, rainy and sunny weather indirectly effect on the hepatitis occurrence through their effect on social behavior of people and human relationship. Rainy days decrease the social activity and movement of persons while sunny days increase the active attendance and higher chance of exposure to risk factors in human population.

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Effects of Adding Cerium Oxide Nanoparticles on the Antibacterial Properties of Glass Ionomer Cement as a Luting Agent for Orthodontic Bands

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ARTICLEINFO

Posters

Keywords:
Cerium Oxide, Glass ionomer, Antibacterial, Orthodontics

ABSTRACT

Introduction: One of the most important and common problems with cemented orthodontic bands on teeth is the prevalence of white spot lesions and tooth decay. The purpose of this study is to investigate the antimicrobial effect of glass ionomer cement used for the cementation of orthodontic bands on teeth.

Methods & Materials: First, cerium oxide nanoparticles were produced, and X-ray diffraction (XRD) and transmission electron microscopy (TEM) structural tests were performed on the obtained nanoparticles. Then, cerium oxide nanoparticles were added in proportions of 1%, 2%, and 4% to the glass ionomer cement used for the cementation of orthodontic bands on teeth. For each group with and without nanoparticles, disc-shaped samples were prepared for each ratio to determine their antibacterial properties using the direct contact test method.

Results: The results of the direct contact test showed that a 1% weight ratio of cerium oxide nanoparticles is the minimum required to destroy all Streptococcus mutans bacteria.

Conclusion: The significant antibacterial activity of glass ionomer containing 1% cerium oxide nanoparticles compared to other common metal nanoparticles, makes them a suitable option for further studies on enhancing the antibacterial properties of cement used for the cementation of orthodontic bands to teeth.

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Efficiency and Application of Genetically Engineered Putative Therapeutic Interfering Particles in HIV Management: A Systematic Review

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ARTICLEINFO

Posters

Keywords:
Engineered putative therapeutic interfering particles, Defective interfering particles, HIV-1 infection, HIV-1 transmission, Antiviral agents

ABSTRACT

Introduction: Defective interfering particles (DIPs) are naturally occurring virus mutants generated during RNA viruses' replication. Due to large genome deletions, DIPs cannot cause productive infections, yet they compete with intact viruses for cell resources, disrupting their replication and packaging. DIPs can be engineered into putative therapeutic interfering particles (TIPs) for HIV-1 treatment, provided they replicate stably with a basic reproductive ratio R01. This systematic review evaluates the efficiency of TIPs in managing HIV-1, based on findings from preliminary in vitro and animal models tested so far.

Materials and Methods: We performed a comprehensive literature search in PubMed, Scopus, Web of Science, and Embase databases as well as medrvix, biorvix and research square pre-print servers up to 12 July 2024. Animal and in vitro studies were included if they had adequate data regarding TIP's transmission rate and packaging efficiency, as well as their impact on HIV-1 viral load and CD4+ T cell protection. Irrelevant papers, research studies with insufficient data, non-English publications, editorials, and review articles were excluded. Ultimately, data were extracted from eligible articles into pre-specified Excel sheets following critical appraisal by Joanna Briggs Institute checklist for diagnostic test accuracy.

Results: Seven studies were eligible for inclusion in this systematic review. In vitro findings revealed that TIPs represented 60% of the total RNA population in extracellular virus-like particles (VLPs), demonstrating a packaging advantage over HIV-1 genomes. TIPs also showed a 6-fold faster transmission rate than HIV across multiple infection cycles. In humanized mice, TIPs suppressed HIV-1 replication by 10-fold and significantly protected CD4+ T cells from depletion. Furthermore, TIP intervention durably suppressed HIV viral load by 4log10 in plasma and lymph tissues, leading to a marked reduction in disease progression.

Conclusions: Preliminary findings suggest that a single dose of TIPs can durably suppress HIV-1 replication in humanized mice and cells from HIV-1 patients. As each 1log reduction in HIV-1 viral load can substantially delay the onset of AIDS and reduce the potential for HIV-1 transmission, these new antiviral candidates hold a great promise for mitigating disease progression, enhancing patient outcomes, and decreasing the spread of HIV-1 at both individual and population levels.

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Electrodes Modification in Viral Biosensors

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ARTICLEINFO

Posters

Keywords:
Biosensing techniques,
Virus diseases,
Electrode modification,
Viral pathogen

ABSTRACT

Introduction: Infectious diseases, particularly viral infections, are a global concern due to their high transmissibility and rapid replication. Timely diagnosis of viral infections is essential in reducing clinical complications, preventing disease spread, and minimizing socio-economic consequences. Developing highly sensitive biosensors using nanoparticles and nanotubes has shown significant progress in detecting pathogenic viruses. This review article aims to analyze the compounds widely used in biosensors for virus detection and highlight their significance in improving electrode performance.

Materials and Methods: This narrative review assessed studies on biosensors designed for the detection of blood-borne viruses available in the Science Direct and Pubmed databases, from 2020 to 2024.

Results: The study uses various nanoparticles and nanotubes, including thiol, gold, and silver, for electrode modification. The research investigates different nanoparticles to assess their impact on electrode performance, focusing on factors such as Limit of Detection (LoD) and linear range.

Conclusion: In conclusion, ione-modified electrodes have shown great potential as a versatile platform for highly sensitive and specific viral biosensors. The careful integration of various materials has enabled the creation of electrodes tailored to meet diverse viral detection challenges. Further research is essential to optimize material combinations, understand underlying mechanisms, and enhance sensor stability. Despite the remaining challenges, the future outlook for ione-modified electrodes in viral biosensing is promising, with the potential to revolutionize disease diagnosis, surveillance, and patient management.

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Epidemiological Investigation and Identification of Viral Agents of Acute Respiratory Infection in Hospitalized Children at Afzalipour Hospital, Kerman, Winter and Spring 1402-1403

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Keywords:
Children, Respiratory infections, SARS-CoV-2 virus, Influenza A, Influenza B, Respiratory syncytial virus, Adenovirus

ABSTRACT

Introduction: Acute respiratory infections (ARIs) are a leading cause of morbidity and mortality in children, particularly in developing countries. This study aimed to conduct an epidemiological investigation and identify the viral agents responsible for ARIs in hospitalized children at Afzalipour Hospital during the winter and spring of 1402-1403.

Materials and Methods: This cross-sectional study was conducted on 100 children diagnosed with ARI. Samples from the oropharynx and nasopharynx were collected from patients and transferred to the virology department. DNA extraction was performed for adenovirus, and RNA extraction was conducted for SARS-CoV-2, influenza A and B, and RSV. Nested-PCR was used to identify adenovirus, while Real-Time PCR was employed for RNA viruses. Data were analyzed using SPSS version 20 and logistic regression tests.

Results: Among the collected samples, 22% were positive for RSV, 14% for influenza A, 3% for influenza B, 3% for adenovirus, and 9% for SARS-CoV-2. Data analysis indicated that certain clinical and demographic characteristics were significantly associated with the presence of viruses. Notably, being younger than 5 years and having a history of underlying conditions were significantly related to the presence of RSV and influenza A. Additionally, children infected with SARS-CoV-2 were more likely to live in urban areas and had a higher percentage of previous viral infections.

Conclusion: This study demonstrated that RSV and influenza A were the predominant agents causing ARI in children, with certain demographic and clinical characteristics, such as age and underlying conditions, playing a crucial role in increasing the likelihood of infection by these viruses. Identifying these viral agents and associated characteristics can be beneficial for clinical management and prevention of ARI in children. Further research is recommended to examine viral patterns and their impacts on public health.

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Epidemiological Study of Acute Otitis Media in Children Admitted to Shahid Rahimi Hospital in Khorramabad in 2022 and 2023

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ARTICLEINFO

Posters

Keywords:
Acute otitis media,
Children, Khorramabad

ABSTRACT

Introduction: Considering that the most likely occurrence of middle ear infection is at the age of under two years and during this period, the greatest intellectual development occurs in the child, it is possible that in the event of hearing problems, it may lead to a decrease in IQ and speech problems. The title of the consequences of incorrect treatment in affected children was the witness and also considering the unknowns in this field, it was decided that in the present study, the epidemiological investigation of children with acute otitis media hospitalized in Shahid Rahimi Hospital in Khorramabad Let's pay the year 1400 to 1403.

Materials and Methods: The case of 106 children with acute otitis media who were admitted to the medical records unit of Shahid Rahimi Hospital were examined by the researcher. Data were analyzed using SPSS software.

Results: During this study, it was found that 78 (67.2%) of the hospitalized children were boys and 38 (32.8%) were girls. The reason for hospitalization was mastoiditis in 9 people (7.8%), dehydration in 61 people (52.6%), sepsis in 8 people (6.9%), and non-response to outpatient treatment in 38 people (32.8%). Also, 83 people (71.6%) were treated with coamoxiclav, 13 people (11.2%) were treated with ceftriaxone, 4 people (3.4%) were treated with vancomycin, 11 people (9.5%) were treated with coamoxiclav + ceftriaxone, 2 People (1.7%) were treated with ampicillin sulbactam + vancomycin and 3 people (2.6%) were treated with cefepime + vancomycin.

Conclusion: These findings emphasize the importance of timely diagnosis and treatment of middle ear infections to prevent complications such as mastoiditis. Overall, the results of this study highlight the need for special attention to the management of middle ear infection in children, especially in boys, and the importance of appropriate follow-up and treatment.

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Epidemiology and Associated Factors of Genital Warts among Patients in Iran: A Cross-Sectional Study Highlighting the Impact of Education and Sexual Behavior

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ARTICLEINFO

Posters

Keywords:
External genital warts; Human papillomavirus; Human immunodeficiency virus; Frequency

ABSTRACT

Introduction: Human papillomavirus (HPV) infection is more prevalent among people with HIV (PWH) and their sexual partners. This study aims to assess the prevalence of genital warts and HIV, examine associated factors like education and sexual behavior, and identify key factors influencing their occurrence in Iran.

Materials and Methods: This cross-sectional study was conducted on all patients with genital warts who were examined in Shahid Faghihi Dermatology Consultation Unit, Shiraz, Iran and undergone an HIV test in 2018. The associated factors related to genital warts and HIV test (negative/positive) in patients were determined using univariate analyses in our study. Significance was determined with a P-value less than 0.05 were assumed significant.

Results: Out of 679 participants in this study, consisted of 498(73.3%) men and 181(26.7%) females. The mean age of participants was 32.1±9.1 years. The frequency of higher education and permanent marriage were 329(48.4%) and 415(61.1%), retrospectively. Moreover, 98(14.4%) and participants who confirmed eGW suffer from addiction and 2(0.3%) from drug Injection. In addition, 528(77.8%) had unprotected sex, 298(43.9%) had multiple sexual partners, and 35(5.1%) participants had homosexual sex. Also, the frequency of HIV positive in patients who suffer from genital warts was 3(0.4%).

Conclusion: The findings of this study suggest a strong correlation between associated factors and eGW. Notably, individuals with higher education levels tend to experience a higher prevalence of genital warts. Furthermore, the findings showed that eGW was strongly linked to a past of engaging in sexual activity with multiple partners.

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Etiologies and Risk Factors of Renal Scar in Children

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ARTICLEINFO

Posters

Keywords:
Children, VUR, High-grade VUR, Kidney scar, Urinary obstruction, Urinary stones, Pyelonephritis

ABSTRACT

Introduction: Different studies suggest the role of vesicoureteral reflux (VUR) and high-grade VUR in renal scarring. This study assessed the etiologies and risk factors for renal scarring in children.

Materials & Methods: A retrospective study was conducted in patients ≤18 years referred to the Nephrology Clinic of Dr. Sheikh Hospital or the nephrology office from April 2015 to March 2023. A Tc99m- DMSA scan was done to evaluate renal scarring. Indications for performing a DMSA scan included VUR, history of pyelonephritis, findings suggestive of renal scaring on kidney ultrasound, increased creatinine level, or high blood pressure with unknown etiology. The roles of age, gender, history of febrile urinary infection, anatomical urinary obstruction, VUR and high-grade VUR, type of VUR (primary or secondary), urinary stones, and neurogenic bladder were compared in groups with and without scars. A logistic regression test was performed to define the risk factors. A P Value 0.05 associated with an odd ratio1 is considered a risk factor.

Results: 383 children were included in the study, 259 (67.6%) were girls. The scan confirmed the presence of scars in at least one kidney in 194 patients (50.6%). Factors accompanied by renal scaring were VUR (125 cases, 64.4%), urinary stones (23 patients, 11.9%), anatomical urinary obstruction (14 patients, 7.2%), pyelonephritis without VUR (10 cases, 5.1%), neurogenic bladder (3 patients, 1.5%), and unknown etiology (19 patients, 10%). The median age of patients with renal scarring was significantly higher than those without (54 months compared to 34 months, respectively, p=0.018). Renal scars were significantly more frequent in patients with VUR and high-grade VUR than those without, respectively (P 0.0001 for both). In addition, renal scarring was significantly more common in cases with anatomical urinary obstruction than those without (p=0.0002). In univariate analysis, VUR, high-grade VUR, and age at presentation were independent risk factors for the occurrence of renal scarring scar (P 0.05 for both).

Conclusion: Factors commonly associated with renal scarring are VUR, acute pyelonephritis, nephrolithiasis, and anatomical urinary tract obstruction. VUR, high-grade VUR, and older age at presentation were independent risk factors for renal scarring.

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Evaluating of Drug Repurposing for Staphylococcus Aureus: A Network Meta-analysis

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ARTICLEINFO

Posters

Keywords:
Drug evaluation, Preclinical; Drug repositioning; Network meta-analysis; Staphylococcus aureus

ABSTRACT

Introduction: *Staphylococcus aureus* is a major global health threat due to its increasing antibiotic resistance. The urgent need for alternative treatments has spurred interest in drug repositioning. This study aims to assess the efficacy of repositioned drugs in treating *S. aureus* infections by comparing survival outcomes in preclinical animal models.

Materials and Methods: The current network meta-analysis (NMA) adhered to PRISMA guidelines, and, following the systematic searching, studies were selected based on their evaluation of non-antibiotic medications against *S. aureus* in animal models, providing survival assay data. Included studies were assessed for risk of bias using the SYRCLE tool. A random effects model was employed to compare drug effectiveness, with results presented as risk differences and ranked using P-scores.

Results: Out of 9042 records identified, 17 studies met the inclusion criteria. The majority of the studies (88.2%) used mice, with intraperitoneal infection models (41.1%) and anticancer drug categories (23.5%) being the most common. Several repositioned drugs showed significantly better survival rates compared to the negative control. Moreover, none of the treatments significantly outperformed the positive controls. Our analysis found that, compared to the negative and positive controls, oral FdUrd and isopropoxy benzene guanidine had the highest P scores (0.98 and 0.9, respectively).

Conclusion: This NMA suggested that repositioned drugs may be effective against *S. aureus* and warrant further clinical testing.

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Evaluating the Efficacy of Quinacrine in the Management of Nitroimidazole-Resistant Giardiasis: A Systematic Review

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ARTICLEINFO

Posters

Keywords:
Quinacrine, Giardiasis, Nitroimidazole

ABSTRACT

Introduction: Giardiasis is an intestinal contamination because of the parasite Giardia lamblia, that is in particular not unusual in areas with negative sanitation. Present day treatments encompass nitroimidazoles, however the emergence of resistance to these capsules has created critical challenges in the control of this contamination. In this study, the efficacy of quinacrine as an opportunity treatment choice in patients who are proof against nitroimidazole is investigated. The purpose of this systematic evaluate is to evaluate the available proof on the therapeutic results of quinacrine in the treatment of nitroimidazole-resistant giardiasis and to offer key insights for clinicians and researchers.

Materials and Methods: A systematic review was performed independently by two people based on the PICO criteria and aligned to the research objective and based on the PRISMA checklist and using PubMed, Medline, Cochrane, Sciencedirect, SID databases Google Scholar search engine, and Boolean operators. The time limit between 2014 and 2024 was determined using the MESH keywords "Giardiasis", "Quinacrine" and "Nitroimidazole". After checking the entry and exit criteria and critically evaluating the quality of the selected articles, a total of 10 articles were included in the study.

Results: The results display that quinacrine works efficaciously in reducing clinical symptoms and parasite clearance in patients proof against nitroimidazole. Studies have proven that doses of 100 mg of quinacrine at some point of 3 days cause a decrease within the parasite load within the feces and a giant improvement within the satisfactory of lifestyles of patients. But sufferers must be cautious approximately possible neurological headaches.

Conclusion: This study shows that quinacrine may be an powerful remedy choice for the management of nitroimidazole-resistant giardiasis. Destiny studies should deal with the determination of top-quality doses, long-term side effects, and particular mechanisms of quinacrine efficacy in extraordinary sufferers.

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Evaluation of Antimicrobial, Anti-Biofilm, Toxicity, and Wound Healing Effects of a Thymol, Cefotaxime, and Ceftazidime-Infused Cold Cream in Mice

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ARTICLEINFO

Posters

Keywords:
Antimicrobial, Anti-biofilm, Toxicity, Wound healing, Thymol, Cefotaxime, Ceftazidime

ABSTRACT

Introduction: Bacterial infections from antibiotic-resistant bacteria are a major cause of death in burn patients. Our study aims to evaluate the antimicrobial, anti-biofilm, toxicity, and wound-healing effects of an ointment containing thymol, cefotaxime, and ceftazidime in cold cream using mice.

Material and Methods: This study was conducted in two parts: in vitro and in vivo. In the in vitro part, the antimicrobial effects of thymol, cefotaxime, and ceftazidime were tested individually and in combination on various bacterial strains. The study also investigated chemical interactions, biofilm inhibition, and cytotoxicity. In the in vivo part, the activity of the compound (F) in cold cream was examined using a mouse model of third-degree burn infection.

Results: The study found that thymol/cefotaxime/ceftazidime exhibited antimicrobial activities on specific strains at varying concentrations: 8/2/2, 16/4/4, 32/8/8, 16/4/4, 64/16/16, 128/32/32 µg/ml, respectively. These compounds also showed antibacterial activity at different concentration ranges: 2-1024/1-256/2-128, 4-128/2-64/1-32, 8-256/2-128/1-128, 16-1024/2-128/2-128, 4-512/2-256/4-128, 512-1024/128-256/128-256 µg/ml on clinical strains. Analysis with FTIR revealed the presence of OH carbohydrates, proteins, and polysaccharides, CH stretching alkene group, C-O-C-polysaccharide, and C=O ester group compound in these three compounds. Moreover, compound (F) showed biofilm inhibition rates of 91.01%, 93.33%, 88.02%, 95.05%, 89.02%, and 76.02% on the mentioned strains, and its toxicity against human RBCs and Ffk cells was 18.36% and 17.26%, respectively. The burn wound area in groups one to three was larger than that of group four and the positive control group. Consequently, in the first or third group, there was better inflammation control, growth of fibroblast cells in burnt tissue, ulcer healing, and blood vessel development compared to the other groups.

Conclusion: The thymol/cefotaxime/ceftazidime ointment in cold cream shows strong antibacterial activity, high anti-biofilm properties, and low toxicity. It can be used in a clinical trial for infectious burn wounds.

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Evaluation of The Effectiveness of Sinopharm Vaccine (BBIBP-corV) in Children Aged 12 to 18 Years

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ARTICLEINFO

Posters

Keywords:
Sinopharm vaccine ,Vaccine effectiveness, Adolescents

ABSTRACT

Introduction: The study addresses the need for real-world data on the effectiveness of the Sinopharm vaccine in reducing the severity of COVID-19 infections, complications, ICU admissions, and mortality among 12 to 18-year-olds in Shiraz, Iran. This research is crucial for health policy-making, especially since serious illness and death from COVID-19, although rare in children, do occur.

Materials and Methods: A retrospective cohort study was conducted using HIS data from Shiraz hospitals (Shahid Faghihi, Namazi, Ali Asghar) for children aged 12 to 18 who were infected with SARS-CoV-2 between August 21, 2021, and February 19, 2022. Data collected included age, gender, PCR test results, symptom onset date, hospitalization dates, and duration of stay in the ward or ICU. Additional information was gathered through questionnaires.

Results: Participants: 711 children (average age 15.12 ± 2.03 years; 52.9% boys), vaccination status: 55.4% non-immunized, 44.6% fully immunized, hospitalization: the hospitalization rate in the immunized group was significantly lower (25.7%) than in the non-immunized group, with a vaccine effectiveness of 52% in preventing hospitalization. Mortality: 16 children (2.3%) died, indicating a 59% effectiveness of Sinopharm vaccine in preventing deaths among the vaccinated group compared to the non-vaccinated group.

Conclusion: Despite the overall lower risk of severe illness and death from COVID-19 in children, the results underscore the importance of vaccination in this age group to mitigate the impact of the virus. The data supports the continued use of the Sinopharm vaccine in adolescents to reduce the burden on healthcare systems and improve public health outcomes. Further research is recommended to monitor long-term effectiveness and potential side effects of the vaccine in this population.

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Evaluation of the Efficacy and Side Effects of COVID-19 Vaccination in Patients with Hypo- or Hyperthyroidism

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ARTICLEINFO

Posters

Keywords:
Thyroid disorders, COVID-19, Vaccine, Disease-modifying therapy, Safety, Immunity

ABSTRACT

Introduction: In the last three years, the pandemic has had major effects on the health of people around the world. This has especially affected individuals who already have other medical conditions, like people with thyroid disorders. Vaccination is so important for this group, and the long-term impacts of inoculation and its security on the well-being of these patients will proceed to be uncovered. Therefore, risks related to vaccination and immune response need to be assessed. This study aimed to characterize the immune response, short-term safety, and the effects of multiple variables on these factors after COVID-19 vaccination among people with thyroid abnormalities.

Materials and Methods: In total, 56 patients (mean age: 37.7±12.6 years old) participated in the study; they had thyroid abnormalities, had received at least one dose of the COVID-19 vaccine, and were usually referred to outpatient clinics for periodical tests. We evaluated the short-term effect and humoral SARS-COV-2 anti-RBD IgG response using a questionnaire and immunoassay, respectively.

Results: It should be noted that no significant adverse events were recorded, but running noise (19.6%), low-grade fever (22.2%), loss of smell (17.9%), and Myalgia/body pain (17.9%) were the most common adverse events. The type of vaccine did not show any notable variation in the occurrence of side effects and humoral response.

Conclusion: Our study showed that patients with controlled hypothyroidism and hyperthyroidism did not have a higher rate of COVID-19 prevalence, nor did they have a worse prognosis when infected with the virus.

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SARS-CoV-2 in Children: A Focus on Chest CT Features

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ARTICLEINFO

Posters

Keywords:
Coronavirus disease 2019 (COVID-19); Coronavirus; Children; Pediatric; Chest CT scan

ABSTRACT

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) primarily targets the respiratory system. While adults are the most affected population, increasing cases among children have been reported. Pediatric patients with COVID-19 often exhibit fever and cough, symptoms commonly seen in other viral illnesses affecting children. The gold standard for diagnosing COVID-19 is the reverse transcriptase-polymerase chain reaction (RT-PCR) test. However, limitations such as delays in obtaining results and availability of testing kits can impact timely diagnosis. Furthermore, the test's sensitivity in nasal swab samples varies between 50% and 72%, making it less than ideal. To address these limitations, chest imaging has emerged as a valuable diagnostic tool. A key advantage of chest imaging is its immediate accessibility and ability to provide rapid diagnostic insights. Studies indicate that even when chest X-rays appear normal, chest CT scans may reveal subtle abnormalities. According to the international expert consensus led by Foust et al. chest CT scans should be systematically reviewed for lesion distribution, extent, density, shape, internal features, and changes in surrounding structures like the pleura. A comprehensive review of confirmed pediatric COVID-19 cases showed that two-thirds of children had abnormal chest CT findings. Among them, 40% exhibited bilateral lung involvement, while 30% showed unilateral disease. Ground-glass opacities were noted in over 50% of cases, and consolidation was observed in 10%. Other findings, such as the halo sign, pulmonary nodules, interstitial patterns, and vascular thickening, occurred in less than 10% of cases. These features may be similar to the imaging findings of other respiratory viral diseases.

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Evaluation of Viral and Bacterial Causes of Exudative Pharyngitis in 3 to 15-year-old Children Referred to The Clinics Affiliated to Kerman University of Medical Sciences

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ARTICLEINFO

Posters

Keywords:
Children, Pharyngitis, Exudative, Bacterial, Viral

ABSTRACT

Introduction: Exudative pharyngitis is one of the common causes of children referral to medical centers. This problem is caused by various bacterial and viral causes. Antibiotics seem to be taken indiscriminately and irrationally. Investigation of bacterial and viral causes is useful for appropriate treatment.

Materials and Methods: This study aimed to compare the bacterial and viral causes of exudative pharyngitis in children aged 3-15 years who referred to the clinics affiliated to Kerman University of Medical Sciences consisted of children who presented with fever and sore throat and were diagnosed with exudative pharyngitis. Samples were taken from the nasopharynx with sterile swabs and sent to the laboratory to culture group A beta-hemolytic Streptococcus (GAS) and molecular analysis of common viruses. The resulting information was recorded on the data collection form. Data were analyzed by SPSS version 20 using descriptive statistics, and an inference was made.

Results: The mean age of the study group was 7.33 years with a standard deviation of 3.05 and the mean age was 7 years. Most cases (42.6%) referred to the clinics in winter. The most common clinical symptoms were fever (86.9%), sudden onset of the symptoms (77%), sore throat (75.4%), and cough (67.2%), respectively. Seven cases (11.5%) were positive for GAS bacteria. Thirty-two cases (52.5%) were positive for the studied viruses. In housewives, the frequency of positive results in terms of bacteria was significantly lower than that in other occupations. The frequency of virus-positive samples in terms of demographic variables, bacteriological test results in terms of disease symptoms, virology test results in terms of disease symptoms, and comparison of clinical signs and symptoms in the positive group in terms of bacteria and virus were not significant (P 0.05).

Conclusion: Viral causes of exudative pharyngitis are more than bacterial causes. If cultured and laboratory diagnosis is available, it is best to identify the causes of pharyngitis before starting treatment with antibiotics.

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Evolving Prevention Strategies for Healthcare-Associated Infections in Dentistry: A Narrative Review Based on COVID-19 Lessons

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ARTICLEINFO

Posters

Keywords:
COVID-19, Healthcare-associated infections, Infection control, Dentistry, Aerosol transmission, Personal protective equipment, Cross-contamination, Dental practice

ABSTRACT

Introduction: The COVID-19 pandemic has underscored the heightened risk of healthcare-associated infections (HAIs) in dental settings, mainly due to aerosol-generating procedures and close patient interaction. Recognizing this, the international dental community has adapted infection prevention protocols to enhance safety measures and reduce cross-contamination. This narrative review synthesizes recent findings to guide the adoption of these protocols in dental practices for sustainable infection control in a post-COVID-19 era.

Materials and Methods: A comprehensive review was conducted using ten relevant articles, focusing on infection control adaptations in dental practices prompted by the pandemic. Critical databases were searched for articles on aerosol transmission, personal protective equipment (PPE), patient screening, and environmental sanitation in dentistry. Only studies highlighting procedural or structural adjustments explicitly made during the pandemic were included.

Results: The findings reveal multi-layered strategies that effectively minimize HAIs, including strict use of PPE, environmental and air quality controls, and optimized patient management. Protocols such as pre-procedural mouth rinses, improved air filtration systems, and structured appointment timings significantly reduce aerosol spread and contamination. PPE upgrades (e.g., face shields, respirators) and stringent disinfection protocols for high-touch surfaces were instrumental in safeguarding dental healthcare personnel (DHCP) and patients.

Conclusion: COVID-19 has catalyzed lasting changes in dental infection control, with enhanced protocols proving essential in preventing HAIs. As the pandemic transitions to endemic stages, dental practices must maintain these rigorous standards to protect DHCP and patients from HAIs. Further research should explore these measures' long-term impact and cost-effectiveness, promoting a resilient healthcare system that is better prepared for future infectious disease outbreaks.

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Examination of Ghrelin Levels in Infected Adults with Helicobacter Pylori

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ARTICLEINFO

Posters

Keywords:
Serum, Ghrelin, Infection, H. pylori

ABSTRACT

Introduction: *Helicobacter pylori* (*H. pylori*) is the main risk factor for stomach cancer and causes gastrointestinal diseases such as gastritis and peptic ulcer. ghrelin hormone plays a role in regulating feeding behavior, energy metabolism and gastric acid secretion. So far, several possible reports have been published about the relationship between ghrelin and gastric cancer, this study investigated the relationship between *H. pylori* infection as the main risk factor for stomach cancer and changes in serum ghrelin levels.

Materials and Methods: The patients were selected with gastrointestinal symptoms and indigestion; 54 Adult patients whose *Helicobacter* tests (histopathology and rapid urease test) were positive and 36 Adult patients whose tests were negative. Serum ghrelin level was measured by ELISA method, p value ≤0.05 was considered as a statistically significant.

Results: Ninety patients with gastrointestinal complaints were entered the study. Among the participants, (60%) women and (40%) were men. The average age of the population was 37±11.5. Fifty-four were *H. pylori* infected and thirty-six non- infected. The serum level of ghrelin was significantly higher in the non-infected group. Among the clinic pathological indicators, two variables, hemoglobin and hematocrit were significantly higher in the patients with *H. pylori* infection compared with non-infected group (p=0.05).

Conclusion: The findings of this study indicated that the serum level of ghrelin in adult patients with H. pylori infection was statistically significantly lower than the non-infected group. The measurement of ghrelin in the serum may help in the follow-up of patients with *Helicobacter pylori*.

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Extended-Spectrum β-Lactamase-Producing Enterobacterales Isolated from Patients with Suspected Bloodstream Infection

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ARTICLEINFO

Posters

Keywords:
Enterobacterales , Bloodstream infection, Shiraz

ABSTRACT

Introduction: Extended-spectrum beta-lactamases (ESBL) are enzymes that confer resistance to most beta-lactam antibiotics, including penicillin, cephalosporin, and the aztreonams. An alarming increase in the occurrence of ESBL has threatened the treatment and management of bloodstream infections. Bloodstream infections (BSIs) are associated with high morbidity and mortality worldwide, in both developed and developing countries. The aim of the study investigates the prevalence of ESBLs among different members of Enterobacterales in Shiraz, Iran.

Materials and Methods: A retrospective study was carried out to determine the epidemiology of Enterobacterales in the blood culture isolates registered to Professor Alborzi Clinical Microbiology Research Center Shiraz, Iran, from March 2022 to March 2024. The isolates were identified by standard biochemical test and biochemical tests embedded in the API-20E biochemical kit system was used for final confirm. Susceptibility testing (disc diffusion) was performed according clinical and laboratory standards institute (CLSI) guidelines. Phenotypic detection of extended spectrum beta-lactamase producing isolates was performed by double disk synergy test (DDST).

Results: Total 367 member of family of Enterobacterales isolated, that among them 327 (89.1 %) were ESBL producers. The most common isolates were ESBL producers *Klebsiella spp*. (37%), *Escherichia coli* (34%), *Enterobacter spp*. (25%). *Klebsiella spp*. was the most common ESBL-producing isolate (37%) of isolates were ESBL positive. ESBL producers exhibited a high resistance rate to ampicillin (99.7%), cefuroxime (99.1%), cefotaxime (94.1%), amoxicillin/clavulanic acid (77.5%), and trimethoprim/sulfamethoxazole (73.3%).

Conclusion: Extended-spectrum-β- Lactamase (ESBL)-producing Enterobacterales bloodstream infections represent a worldwide clinical issue, especially given their association with multidrug resistance, severity of illness, poor outcomes, and growing number in the community. Our data make obvious the high prevalence of ESBL producers in *K. pneumoniae* and *E. coli* BSI in hospitals in Shiraz, Iran, confirming the Multi drug resistance strains are increasing and treatment of infections causing by this isolate are major problem in Iran.

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Frequency of Clinical Outcomes of Covid-19 with the Omicron Sub-Variants in Patients Admitted to Akbar Children's Hospital of Mashhad in 2021-2022

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ARTICLEINFO

Posters

Keywords:
Clinical symptoms, Coronavirus, Omicron, Children

ABSTRACT

Introduction: Omicron, a strain of Covid-19, is becoming a major issue of global concern. Its high transmissibility may pose challenges for health care distribution in densely populated countries. Examining the behavior of the virus will certainly help in planning to reduce the incidence of this variant of the corona virus in the future. The purpose of this study is to investigate the frequency and clinical symptomes of covid-19 with Omicron subvariants in Akbar Mashhad Children's Hospital in order to help prevent and control this variant of coronavirus.

Materials and Methods: In this descriptive-analytical study, 320 patients with coronavirus with micron subvariant referred to Akbar Children's Hospital in 1400-1401 are included. The inclusion criteria for the study are all hospitalized patients with coronavirus and the exclusion criteria for patients with covid-19 with non-Omicron subvariant. The method of data collection is by recording information in the researcher's checklists as well as the information in the patients' medical records. Finally, the collected data are analyzed using IBM SPSS.V22 statistical software.

Results: In the results of this study, the frequency of clinical outcomes with the Omicron variant was fever above 38 degrees (53%), oxygen saturation percentage less than 96% (44.2%), runny nose (57.7%), cough (79.9%), sore throat (67.7%), chest pain (46.4%), headache (64.3%), altered level of consciousness (16.3%), seizures (24.1%) , diarrhea (35.9%), vomiting (42.9%), smell and taste disorder (47.3%), arthralgia myalgia (8.8%), rash (15%) and hospitalization in ICU (14.7%). Also, there was a correlation between different symptoms of the disease and these clinical outcomes were not independent of each other.

Conclusion: The findings of the present study show that cough and sore throat are the most common clinical symptoms in children with Omicron sub-variant. Also, although the proportion of hospitalized patients is still significant, very few patients need to be admitted to the ICU, and this indicates that this variant of coronavirus is milder than other variants.

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Frequency of Early Antibiotic Prescription in the Pediatric Emergency Department of Shahid Rahimi Hospital in Khorramabad during 2023 and Its Association with Factors Related to Early Prescription

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ARTICLEINFO

Posters

Keywords:
Early antibiotic prescription, Pediatric emergency department, Risk factors, Lorestan

ABSTRACT

Introduction: Early administration of antibiotics in the emergency department is a common approach in the initial management of infections and critical conditions in children. This practice can help reduce complications resulting from severe bacterial infections. However, the unnecessary and excessive use of antibiotics is associated with consequences such as bacterial resistance, increased healthcare costs, and adverse drug reactions. The present study aims to investigate the frequency of early antibiotic administration in the pediatric emergency department of Shahid Rahimi Hospital in Khorramabad in the year 2023, and to analyze its association with factors related to early administration.

Materials and Methods: This research was a cross-sectional descriptive-analytical study. The study population included all children who visited the pediatric emergency department of Shahid Rahimi Hospital in Khorramabad in 2023. Sampling was conducted using a convenient method. The required data were collected through a checklist. After data collection, the data were entered into SPSS software version 27 and subjected to statistical analysis. Descriptive statistics (frequency and percentage) were used for data description, and analytical statistics (t-test and chi-square) were used for assessing correlations and the impact of variables. The results were presented in the form of charts and statistical tables. A p-value of less than 0.05 was considered statistically significant.

Results: In this study, a total of 356 children were examined. Of these, 225 (63.2%) were boys and 131 (36.8%) were girls. The mean age and standard deviation of the children in the study were 43.41±39.26 months, ranging from 1 to 164 months. The 93 average duration of hospitalization in the emergency department was 4.97±3.28 days, ranging from 1 to 21 days. Overall, 129 (36.2%) children received early antibiotic therapy, while 227 (63.8%) did not. Statistical analysis revealed a significant association between early antibiotic prescription and the following variables: a history of antibiotic use (P=0.001), the prescribing physician (P=0.028), length of hospitalization (P=0.001), respiratory rate (P=0.023), soft tissue swelling (P=0.001), poor general condition (P=0.036), dehydration (P=0.024), respiratory distress (P=0.005), pharyngeal erythema (P=0.030), strawberry tongue (P=0.047), lymphadenopathy (P=0.030), crackles in lung auscultation (P=0.003), tympanic membrane erythema (P=0.007), chills (P=0.004), fever (P=0.001), seizures (P=0.001) and productive cough.

Conclusion: Many variables including a history of antibiotic use and respiratory tract sign and symptoms were associated with early antibiotic therapy.

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Frequency of Positive Blood Cultures and Type of Organisms in Dr. Sheikh Hospital

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ARTICLEINFO

Posters

Keywords:
Infection, Blood culture, Organism, Pediatrics

ABSTRACT

Introduction: There the mortality of children is higher in of positive blood cultures; it is of special importance to recognize the common organism. Therefore, this study was conducted with the aim of investigating the prevalence and type of organisms.

Materials and Methods: This was a cross-sectional study which was conducted on medical records between 21 March 2023 and 23 September 2023 in Dr Sheikh hospital, retrospectively. The frequency of total blood cultures, positive cultures and type of organisms were recorded and analyzed.

Results: Of 3187 cultured samples, 295 (9.25%) were positive. Approximately 93.22% were from inpatient samples. In outpatient samples, the Staphylococcus epidermidis and Klebsiella were the most common organisms (20% and 15% respectively). Pseudomonas, Staphylococcus aureus and Difteroides were the least common (5% each). In inpatient samples, E-coli and Klebsiella were the most common bacteria (12.72% each). The frequency of Staphylococcus saprophyticus, Enterobacter, Haemophilus influenzae, Salmonella, viridians Streptococci and Difteroides was 0.36% as least common organisms. The frequency of yeast in outpatient and impatient samples was 5% and 6.54% respectively. E-coli (17.89%), Pseudomonas (18%) and Klebsiella (17%) were the most common organisms in the intensive care unit (ICU), hematology and emergency wards respectively. E-coli, Pseudomonas and Staphylococcus aureus were the most common bacteria in nephrology ward (13% each)

Conclusion: Given that most of the patients admitted to the intensive care unit (ICU), were referred from one of the three departments of hematology, emergency and nephrology due to the instability of their clinical conditions, knowing the prevalence of microbial germs and the pattern of microbial resistance by departments can be a big step in choosing an Experimental empiric regimen in the pediatric intensive care unit.

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Frequency of Vesicoureteral Reflux (VUR) and High Grade-VUR in Children with Lower Urinary Tract Infection and Asymptomatic Bacteriuria (ABU)

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ARTICLEINFO

Posters

Keywords:
Children, VUR, High-grade VUR, Cystitis, Asymptomatic bacteriuria

ABSTRACT

Introduction: Urinary tract infection presents as acute pyelonephritis, cystitis, and asymptomatic bacteriuria. The study was designed to investigate the frequency of vesicoureteral reflux and its high-grade forms in children with cystitis and asymptomatic bacteriuria (ABU).

Materials & Methods: A retrospective study was conducted on children 2-18 years old from 2007 to 2022. The criteria for entering the study were the diagnosis of ABU or cystitis and performing both kidney-bladder ultrasound and VCUG. Those with cystitis enrolled if one of the following characteristics was present: Recurrent cystitis (3 or more episodes), abnormal kidney ultrasound, presence of lower urinary tract symptoms in the absence of UTI, sibling of VUR cases, and history of prenatal hydronephrosis. Patients with a history of pyelonephritis in the past, or known urological disorders such as obstructive uropathies, neurogenic bladder, cerebral palsy, and chronic kidney disease stage 3 and more were excluded from the study. The patients were divided into groups of cystitis and ABU. The frequency of VUR and high-grade VUR were defined.

Results: A total of 111 patients including 105 (94.6%) girls and 6 (5.4%) boys included in the study. The median age at presentation was 58 months. 103 (92.7%) cases were in cystitis and 8 patients were (7.3%) in the ABU groups. Vesicoureteral reflux was reported in 23 of 103 cystitis groups (22.3%) and one of 8 cases (12.5%) with a diagnosis of ABU. high-grade VUR was reported in 3 out of 103 cystitis patients (2.9%). No case in the ABU group had high-grade VUR. Hydronephrosis was significantly associated with both VUR and high-grade VUR, and high-grade VUR was significantly more prevalent in boys than girls (P 0.05 for all). The frequencies of VUR and high-grade VUR were not significantly different considering etiologies (E-coli compared to non-E-coli UTIs) and forms of infections (cystitis versus ABU) (P 0.05 for all).

Conclusion: VUR is not uncommon in children with cystitis and ABU. We found that in children with cystitis, the frequency of VUR and high-grade VUR increases in cases with hydronephrosis and high-grade VUR is more prevalent in boys than in girls.

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Gene Expression Analysis of MexCD-OprJ and MexEF-OprN in Hospital Isolates of Pseudomonas aeruginosa

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ARTICLEINFO

Posters

Keywords:
Hospital infections, MexCD-OprJ and MexEF-OprN, *P. aeruginosa*, Multidrug-resistant

ABSTRACT

Introduction: In recent years, the emergence of multidrug-resistant (MDR) strains of *Pseudomonas aeruginosa* in hospital settings has presented formidable challenges in patient management and infection control. Therefore, understanding the molecular mechanisms of antibiotic resistance is essential due to the significance of mortality resulting from drug resistance in *P. aeruginosa* infections. The aim of this study is to investigate the antibiotic resistance pattern and the expression levels of MexCD-OprJ and MexEF-OprN efflux genes in clinical isolates of *P. aeruginosa* collected in Mashhad between the summer and autumn of 2023.

Materials and Methods: A total of 103 P. aeruginosa isolates were obtained from clinical samples collected from various hospital units. The isolates were identified using standard phenotypic and biochemical methods. Antibiotic resistance was assessed using the disc diffusion method with antibiotic discs containing Cefepime, Aztreonam, Norfloxacin, Levofloxacin, Ofloxacin, Ceftiofur, and Ceftriaxone. Additionally, the agar dilution method was employed for minimum inhibitory concentration (MIC) technique for levofloxacin. Furthermore, the gene expression of MexC and MexE efflux pumps was evaluated using Real-Time PCR.

Results: In a study of 103 *Pseudomonas aeruginosa* isolates, 65% were from male patients and 35% from female patients. All isolates were resistant to ceftriaxone, with high resistance rates to other antibiotics: 93% to ceftiofur, 65% to cefepime, and 54.4% to aztreonam. About 71% of isolates were resistant to fluoroquinolones. Over half (53.4%) of the isolates were identified as multidrug-resistant (MDR). The highest resistance level, observed in 22 samples, was linked to overexpression of efflux pumps. Real-Time PCR results confirmed higher expression of resistance-related genes (mexE and mexC) in some levofloxacin-resistant MDR strains.

Conclusion: In conclusion besides the upregulation of mexE and mexC pumps, other resistance mechanisms such as mutations and the presence of integrons, contribute to the observed high resistance levels in the studied strains.

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Global prevalence of Chlamydia trachomatis: A Systematic Review and Meta-Analysis

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ARTICLEINFO

Posters

Keywords:
Sexually transmitted infections, *Chlamydia trachomatis*, Meta-analysis

ABSTRACT

Introduction: Sexually transmitted infections (STIs) are a major public health problem worldwide, with a high prevalence between the ages of 15 and 25 in most Western countries.Various factors play a role in causing sexually transmitted infections, of which Chlamydia trachomatis is one of the most common organisms involved in causing these diseases. Because many of these infections are asymptomatic in people and their treatment is challenging, the present study aimed to investigate the prevalence of C. trachomatis worldwide through a systematic review and meta-analysis

Materials and Methods: A systematic literature search was conducted for original research articles published in Medline, Web of Science and Embase databases from 2000 to 2024. Statistical analysis was performed using STATA 14 software to report the prevalence of C. trachomatis in patients with STDs worldwide.

Results: In prevalence studies, 17288 *C. trachomatis* clinical isolates were collected 80 countries around the world. The frequency of *C. trachomatis* infection was 41.8 %. Based on case reports/case series studies, lymphogranuloma venereum (LGV) and urethritis were the most common diseases. Also, human immunodeficiency virus (HIV) was the most reported co-infection. The highest and lowest cases were in the USA (43 cases) and Spain (22 cases), respectively.

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HPV Genotype Distribution in the Anogenital Warts and Semen from the Fars Province Population

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Posters

Key words:

ABSTRACT

Introduction: Regarding the importance of HPV vaccination in the prevention of HPV infection outcomes such as cervical cancer, determining the distribution of HPV genotypes in the community is critical to setting the policy to decrease the disease outcomes. So, we aimed to detect the prevalence of the common HPV genotypes in the anogenital warts and semen specimens collected from the Fars province population.

Materials and Methods: Seventy-two samples including 54 tissues and 18 semen were included in the study, and DNA was extracted from the specimens using DNA extraction kits and 21 HPV genotypes were detected using real-time PCR methods based on the manufacturer's instruction. The results were analyzed using the R programming package version 4.3.3 and SPSS version 23.

Results: HPV genotyping was conducted on 35 (48.6%) males and 37 (51.4%) females samples with age mean ± SD; 32.46 ± 8.55, and 34.43 ± 13.45 years, respectively. The warts specimens were collected from 17 (31.5%) males and 37 (68.5%) females. The tissue samples were from 18 penile (33.3%), 12 anal (22.2%) and 24 vaginal (44.4%) warts. Of warts, 38 (70.4%) samples were positive, among them, 23 (60.5%) and 15 (39.5%) tissues were positive with single and multiple HPV genotypes, respectively. From the semen, 10 (55.6%) samples were positive that infection with single or various genotypes was observed in 6 (60%) and 4 (40%) positive samples, respectively. Together, infection with 1, 2, 3, 4, and 5 HPV types were observed in 29 (60.4%), 12 (25%), 3 (6.2%), 1 (2%), and 5 (10.4%) of positive samples, respectively. Among HPV genotypes, HPV 6 was the most frequent type with a frequency of 34 (37%) which were detected in 29 warts and 5 semen samples. The frequency of high-risk genotypes 16 and 18 were 5 (6.3%) detected in 3 and 4 warts and 4 and 1 semen samples, respectively. Collectively, 15 different HPV genotypes were detected in the warts and semen samples.

Conclusion: Since HPV is known as the most common cause of sexually transmitted diseases, we detected 15 different HPV types in the anogenital and semen samples, and only 9 of them

Keywords: HPV genotype, Anogenital warts, Semen, Fars province

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Infectious Endophthalmitis after Intravitreal Anti-VEGF Injections: Incidence, Features, Management, and Microorganism Identification

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ARTICLEINFO

Posters

Keywords:
Endophtalmitis, Intravitreal injection, vascular endothelial growth factor

ABSTRACT

Introduction: Intravitreal injections (IVIs) are currently the most rapidly increasing procedure in both ophthalmology and medicine as a whole. They are commonly used for conditions such as Age-Related Macular Degeneration (AMD), diabetic retinopathy, and macular edema linked to venous occlusive disease. The most frequently administered injections involve anti-angiogenic agents, are including aflibercept, bevacizumab, and ranibizumab. Although these injections are effective, they carry a slight risk of infectious endophthalmitis, which could severely impact vision. This study presents the clinical and microbiological characteristics, visual outcomes, and the incidence of endophthalmitis following intravitreal injections (IVIs) at Imam Khomeini Hospital, Ahvaz, Iran.

Materials and Methods: This retrospective case series, conducted from April 2021 to July 2024, examined the incidence, clinical characteristics, management strategies, and microorganism identification in cases of acute infectious endophthalmitis following intravitreal Anti-Vascular Endothelial Growth Factor (VEGF) injections, using billing records. The inclusion criteria involved reviewing the charts of 15 patients who displayed clinical signs of acute endophthalmitis out of a total of 7,396 injections administered during the study period. Incomplete data were excluded. Nine patients received intravitreal antibiotic injections (IVAI), including vancomycin (1.0 mg/0.05mL), ceftazidime (2.25 mg/0.05mL), and dexamethasone (0.4 mg/0.1mL). Four patients were treated with intravitreal antibiotic injections and dexamethasone (0.4 mg/0.1mL), followed by pars plana vitrectomy (PPV) a few days later. Additionally, one patient underwent PPV with intravitreal antibiotic administration at the end of surgery (IVAIES). The primary outcome measures were the effectiveness of infection control with IVAI and dexamethasone as a standalone treatment, compared to early PPV followed by IVAIES.

Results: Over the course of the study, 7,396 intravitreal injections (IVIs) were analyzed, with 15 cases of endophthalmitis identified, resulting in an overall incidence rate of 0.2%. Positive intraocular cultures were obtained in 40% (6 out of 15) of the post-injection cases, with the majority of infections being linked to Enterococci.

Conclusion: Acute endophthalmitis following intravitreal anti-VEGF injections is a rare but potentially serious complication. It can often be effectively managed with a vitreous tap and intravitreal antibiotic injections. However, if there is no response to initial treatment (IVAI) and vitritis persists, the possibility of infection by uncommon pathogens

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Inhibitory Effects of Fucoidan on Growth, Antibiotic Sensitivity, and Biofilm Formation in Pseudomonas Aeruginosa

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ARTICLEINFO

Posters

Keywords:
Antibiotic resistance, P*seudomonas aeruginosa,* Growth, Biofilm formation, Biofilm-related genes

ABSTRACT

Introduction: *Pseudomonas aeruginosa* is a major pathogen responsible for chronic infections, known for its high resistance to antibiotics and its ability to form biofilms. The formation of biofilms significantly complicates treatment and contributes to antibiotic resistance. Fucoidan, a sulfated polysaccharide extracted from brown seaweed, has demonstrated potential antimicrobial and antibiofilm properties.

Materials and Methods: The effect of fucoidan on *Pseudomonas aeruginosa* growth was assessed in comparison to a control group. Biofilm formation was quantified using crystal violet staining, and real-time PCR was performed to measure the expression of biofilm-related genes. Additionally, antibiotic susceptibility was evaluated before and after exposure to fucoidan.

Results: Fucoidan significantly reduced the growth of *Pseudomonas aeruginosa* compared to the control group (p0.05). Furthermore, the formation of biofilms was notably inhibited in the presence of fucoidan, with a significant downregulation of biofilm-associated gene expression. Fucoidan also enhanced the antibiotic sensitivity of *Pseudomonas aeruginosa*, suggesting a potential role in overcoming antibiotic resistance.

Conclusion: Fucoidan effectively inhibits bacterial growth and biofilm formation in *Pseudomonas aeruginosa* while reducing the expression of biofilm-related genes. These findings highlight the potential of fucoidan as an adjunct treatment in controlling biofilm-associated infections and improving antibiotic efficacy against *Pseudomonas aeruginosa*.

Keywords:

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Innovative κ–Carrageenan/Locust Bean Gum/Cranberry Extract Wound Dressing for Real-Time Monitoring of Bacterial Infections

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ARTICLEINFO

Posters

Keywords:
Wound Dressing,
Bacterial infections,
Management

ABSTRACT

Introduction: Chronic wound infections pose significant challenges in clinical treatment, especially with the rise of antibiotic resistance. Recent advancements in biomaterial science have led to the development of smart wound dressings capable of both detecting and treating infections. This systematic review explores the efficacy of wound dressings formulated with κ–carrageenan, locust bean gum, and cranberry extract in monitoring and managing bacterial infections.

Materials and Methods: A literature search was conducted using PubMed, Scopus, and Web of Science to identify studies published between 2012 and 2023 that focus on smart wound dressings incorporating natural biopolymers and antimicrobial agents. The search terms included "κ–carrageenan," "locust bean gum," "cranberry extract," "wound dressing," and "bacterial infection." Inclusion criteria were studies reporting antimicrobial activity, infection monitoring capabilities, and clinical outcomes related to wound healing.

Results: The review found that κ–carrageenan-based dressings exhibited strong antimicrobial properties, primarily against Gram-positive bacteria. Cranberry extract, with its high phenolic content, enhanced the antimicrobial efficacy by disrupting bacterial biofilms. Locust bean gum contributed to the structural integrity and moisture retention of the dressing, promoting faster wound healing. The combination of these materials also enabled real-time monitoring of wound conditions, using colorimetric changes in response to bacterial growth.

Conclusion: κ–carrageenan/locust bean gum/cranberry extract wound dressings demonstrate significant potential for managing chronic wound infections. Their dual function of bacterial detection and eradication makes them promising candidates for further research and clinical application.

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Investigating The Antibiotic Resistance Pattern of Escherichia Coli Causing Urinary Tract Infection in Patients Referred to Khatam al Anbia Hospital in Shirvan City in 2023

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ARTICLEINFO

Posters

Keywords:
Urinary tract infection,
Escherichia coli,
Antibiotic resistance

ABSTRACT

Introduction: Urinary tract infection is one of the most common bacterial infections in the world, and Escherichia coli is the most common cause of urinary tract infections in the world. Due to the increasing antibiotic resistance and since there is a direct relationship between the amount Antibiotic prescribing is seen in a wide range of organisms. Therefore, this study was conducted with the aim of investigating the antibiotic resistance of *Escherichia coli* in Khatam Al Anbia Hospital, Shirvan.

Materials and Methods: In this cross-sectional descriptive study that was conducted from April to March 2023, 113 (8.8%) of 1513 urine culture samples sent from patients admitted to Khatam Al Anbia Hospital in Shirvan city were positive. Different bacterial culture environments as well as different biochemical tests were used to identify bacterial isolates and the disk diffusion method was used to check the antibiotic resistance of Escherichia coli bacteria.

Results: Out of 113 positive samples in 2023, 60 (53.1%) samples were related to *Escherichia coli* bacteria, of which ceftazidime antibiotic (76%) was the most resistant and nitrofurantoin (6.7%) was the least resistant. The resistance of other antibiotics is cefepime (63.1%), ciprofloxacin (62.74%), gentamicin (34.5%), piperacillin tazobactam (20%) and amikacin (16.1%).

Conclusion: In general, according to the results, the most resistant antibiotics are ceftazidime and ceftazidime, which are recommended not to be prescribed due to their resistance and ineffectiveness in treatment. Nitrofurantoin and piperacillin tazobactam have the highest sensitivity, respectively.

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Investigating the Relationship between the Experience of Uncivilized Behavior in the Clinical Environment and the Perception of Patient Safety Culture: A cross- sectional Study in Novice Nurses

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ARTICLEINFO

Posters

Keywords:
Clinical environment, Uncivilized behavior, Patient safety culture, Novice nurses

ABSTRACT

Introduction: Creating a culture of patient safety is one of the priorities of healthcare organizations to eliminate preventable adverse events in healthcare environments. But uncivilized behaviors can affect nurses' performance and put patient safety at risk, so prevent the creation of a patient safety culture and a healthy work environment. As a group of nurses, novice nurses may be the most victims of these behaviors, which can affect novice nurses and patient safety. Therefore, the first step to create a healthy work environment and build a patient safety culture is to evaluate the current culture and factors related to it. Based on this, the present study provides information on the current status of uncivilized behaviors, patient safety culture and the relationship between these factors.

Materials and Methods: This is an analytical-cross-sectional study on 300 nurses working in Guilan University of Medical Sciences hospitals who were selected by census sampling method. The data collection tools included demographic tools, "Nurses uncivilized Behavior Scale" and "Hospital Survey of Patient Safety Culture" questionnaire.

Results: The overall mean percentage of positive responses to patient safety culture dimensions was 54.25%. The highest percentage of positive answers related to the dimension of "altruism" 86. 9% and "cooperation to maintain and promote patient safety" and 84.48%. the lowest percentage was related to the dimension of "event reporting frequency" with 25.83%. The highest experience of uncivilized behavior was related to the patient and companions with an average of 2.37 and the lowest was related to the supervisor with an average of 2.02. Also, there was a significant relationship between the experiences of uncivilized behaviors with lower safety culture of hospitals.

Conclusion: These results have provided policymakers and hospital managers an insight into healthy work environment and management performance in order to expand and implement policies to eliminate uncivilized behaviors in clinical environments and strengthen the safety culture, the safety of patients and ultimately the improvement of the quality of care.

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Investigating the Residual Effects of Antibiotics in Food on Intestinal Microflora, a Systematic Study

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ARTICLEINFO

Posters

Keywords:
Food, Antibiotic, Microbiota

ABSTRACT

Introduction: Gut microbiota may change following changes in diet or exposure to drugs. Humans can be exposed to antibiotic residues in food. People may be exposed to these compounds for years. But in calculating the maximum residue level (MRL), the effects of antibiotic residues on the intestinal microbiota have not been investigated. Some evidence shows that even at low doses of antibiotics lead to changes in the gut microbiota. Therefore, a systematic study was conducted with the aim of investigating the effect of antibiotic residues in food on intestinal microbiota.

Materials and Methods: The main criterion of this research was to investigate the effects of antibiotics at low doses. For this purpose, a database search was conducted with the keywords antibiotic, veterinary antibiotic, food, residue, microbiome and microbiota. The tested doses of each antibiotic in the studies were compared with their MRL in food.

Results: The most changes in the structure and function of microbiota were related to tetracycline, sulfamethoxazole, cefquinome, florfenicol and tylosin. The lowest observed effect was related to fosfomycin and amoxicillin antibiotics.

Conclusion: Exposure to antibiotic residues through food is usually a long-term exposure. Gut microbiota may be altered following food containing residue of antibiotics at a minimum dose in this long-term exposure. Therefore, it is necessary to inform breeders and competent authorities in order to comply with the principles of treatment.

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Investigation of Epidemiology, Clinical and Laboratory Symptoms of Children to the Age of 18 Hospitalized with Brucellosis in Khorramabad's Teaching Hospitals from 2011 to 2022

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ARTICLEINFO

Posters

Keywords:
Brucellosis, Children, Khorramabad

ABSTRACT

Introduction: Brucellosis is a disease that can be treated with a correct diagnosis, and familiarity with its symptoms and common clinical findings has a great contribution in controlling the disease. This issue is more important in children because it has a great impact on their growth. Therefore, the present study was conducted with the aim of investigating the epidemiology, clinical and laboratory symptoms of children (up to the age of 18) hospitalized due to brucellosis in the teaching hospitals of Khorramabad from 2013 to 2014.

Materials and Methods: By referring the researcher to the Medical Records Unit of Shahid Madani and Shahid Rahimi Hospitals, the files of eligible patients were extracted and the information needed for the study was entered into the researcher's checklist.

Results: In examining the laboratory symptoms of the patients, it was found that 35 people (26.3%) had leukopenia, 12 people (9%) had thrombocytopenia, and 42 people (31.6%) had anemia. 44 subjects (33.1%) had no laboratory findings on their CBC. In all cases, a write test was performed, which was positive in 129 cases (97%). The Coombs-Wright test was performed in 64 cases (48.1%), which was positive in all cases. 2ME test was positive in 37 cases (27.8%), negative in 13 cases (9.8%), and not performed in 83 cases (62.4%). The results of the ELISA test were related to IgM in 13 cases (9.8%), IgG in 10 cases (7.5%), negative in 1 case (0.8%), and not requested in 109 cases (82%). Blood cultures were positive in 4 cases (3%), negative in 7 cases (5.3%), and not done in 122 cases (91.7%).

Conclusion: Considering the age prevalence of patients and the findings obtained, it is recommended that in children over two years of age with fever and joint pain, even if the history of non-pasteurized dairy consumption is negative, we should think about brucellosis.

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Investigation of the Prevalence of Human Papilloma Virus and Different Genotypes of the Virus in the Population of Infertile Women and Men

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ARTICLEINFO

Posters

Keywords:
Human papilloma virus, Infertility, Oligospermia, Azoospermia

ABSTRACT

Introduction: *Human papilloma virus* (HPV) is a prevalent sexually transmitted infection that affects both men and women, impacting the cutaneous and mucosal squamous epithelium. This study aimed to assess the prevalence of HPV in the semen of individuals with oligospermia, azoospermia, and normal sperm counts and women with HPV infection.

Materials and Methods: Between June 2023 and June 2024, 96 participants were included in this cross-sectional study. DNA was extracted from semen and cytology liquid brush samples, and the consensus sequences MY09/11 (18) and GP 5+/6+ (19) were used to amplify L1-region using a Real-time PCR based on SYBR-Green. Positive samples were then genotyped with the MehrViru, Iran HPV Genotyping Extra assay.

Results: In the oligospermic group (36 participants), Six tested positive for HPV DNA (16.6%). In the azoospermic group, 2 out of 20 (10%) were positive, while only 3 out of 40 (7.5%) in the normal group were positive. In the cytology liquid brush, 4 out of 96 samples were positive. Statistical analysis using SPSS v.22 revealed no significant differences among the demographic data. However, independent samples t-tests indicated significant differences in sperm count (p0.05) and slow sperm motility (p0.05) in HPV-positive oligospermic samples. A total of 15 HPV genotypes were identified, with high-risk types 16 and 45, and low-risk types 6, 11, and 42 being the most common.

Conclusion: This study demonstrates that HPV infection can negatively impact sperm count and motility, suggesting a potential link between HPV and male fertility issues.

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Iran's Scientific Position in the Subject Area of Infectious Diseases in the Middle East and the World

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ARTICLEINFO

Posters

Keywords:
Infectious diseases, Medicine, Iran, Scientific authority
Machine Learning Models for

ABSTRACT

In scientific databases, one of the fields of medicine is the subject area of infectious diseases. Given the importance of scientific and research activities in this specialized field, the aim of this study is to investigate Iran's scientific position in the field of infectious diseases in the Middle East and world. This study was conducted using data from the Scimago, SciVal, and Scopus databases, covering the period from 2019 to 2023. According to the results, in 2023, Iran ranked 18th in the world in the field of infectious diseases with 1,096 articles, and secured first place in the Middle East. In the same year, Iran ranked 19th in the world and second in the Middle East in terms of total citations. Based on the H-index, the country ranked 45th globally and 3rd in the Middle East. Additionally, 50% of the articles from the past five years were published in Q1 and Q2 journals. Moreover, 25% of the articles in this field from the last five years involved international collaboration. The results of this study indicate that in order for Iran to be among the top 10 countries in the world in the specialized field of infectious diseases, its scientific output must be doubled.

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Malaria Prediction Using Clinical Data: A Systematic Review

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ARTICLEINFO

Posters

Keywords:
Machine learning,
Malaria, Prediction

ABSTRACT

Introduction: As one of the most essential infectious diseases in tropical and subtropical areas, malaria is still a primary project for global health. Early diagnosis and prediction of this ailment can assist enhance remedy control and decrease mortality. In current years, machine gaining knowledge of fashions have received attention as a brand new technique in predicting sicknesses together with malaria because of their correct and speedy prediction competencies. The goal of this evaluation is to systematically examine current research on the use of system getting to know models to expect malaria the usage of clinical records.

Materials and Methods: A systematic review was performed independently by two people based on the PICO criteria and aligned to the research objective and based on the PRISMA checklist and using PubMed, Medline, Cochrane, Sciencedirect, SID databases Google Scholar search engine, and Boolean operators. The time limit between 2019 and 2024 was determined using the MESH keywords " Machine Learning", "Malaria "and "Prediction". After checking the entry and exit criteria and critically evaluating the quality of the selected articles, a total of 8 articles were included in the study.

Results: inspecting the effects of studies indicates that machine getting to know fashions, particularly algorithms based on deep mastering, have considerable overall performance in as it should be predicting malaria. Extra complicated algorithms, together with deep and reinforcement neural networks, had been able to extract complex capabilities from medical statistics and feature furnished widespread development in prediction accuracy as compared to less complicated models along with decision trees. But, some boundaries, such as the shortage of general statistics and obstacles inside the generalizability of the results to special populations, have nevertheless created demanding situations.

Conclusion: This study suggests the importance of the use of machine getting to know inside the prognosis and prediction of malaria and indicates that destiny research have to develop models that, similarly to excessive accuracy, also can be generalized to exclusive geographic areas and populations. Also, the need for extremely good and standardized scientific information is felt to improve the performance of predictive fashions on a worldwide scale.

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Medical Error Due to Incorrect Documentation of Mebendazole Drug Prescription in Electronic Prescription and Failure to Treat Other Family Members

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ARTICLEINFO

Posters

Keywords:
Legal aspect, Ethical aspect, Mebendazole, Enterobius vermicularis, Family members, Medical error

ABSTRACT

A 33-year-old married woman went to the doctor with anal itching. Diagnosis was Enterobius vermicularis and mebendazole was prescribed just for her. The patient was cured, But the symptoms returned. She went to another doctor and was prescribed mebendazole again. The doctor asked about the treatment of other family members, which is met with a negative answer due to the lack of information from the first doctor. After treatment of the patient and other family members, including her husband, the symptoms were completely cured. Mebendazole are used to treat Enterobius vermicularis. The treatment consists of two doses of medicine that are prescribed two weeks apart from each other. All family members and caregivers of people with ringworm should be treated. It should be noted that recurrent infection is very common. Therefore, it is very important to wash your hands regularly, keep your fingers short, avoid biting your nails, and avoid frequent scratching around the anus. Bathing and changing underwear, sheets and towels daily helps to reduce the number of worm eggs and reduce the possibility of repeated infections. It is recommended to wash the infected person's clothes frequently with hot water until the infection is completely removed. The treatment of many infectious diseases is not only focused on the patient herself or himself. Other family members and even pets should be considered. Conclusion: In order to avoid such mistakes, it is necessary 1- Oral explanations should be given to the patient about the necessity of the same treatment as other family members(Ethical aspect) 2- Documentation in his electronic file is also necessary(Legal aspect).

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Medical Malpractice Following Administration of Phenobarbital Instead of Phenazopyridine in A Patient with Urinary Tract Infection

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ARTICLEINFO

Posters

Keywords:
Phenobarbital, Phenazopyridine, Malpractice, Swiss cheese

ABSTRACT

A young lady goes to the doctor because dysuria. The doctor prescribes phenazopyridine 100 mg 3 times a day. However, in the electronic prescription registration system, Phenobarbital 100 mg 3 times a day is prescribed by mistake. The pharmacy did not pay attention to the diagnosis of the disease and other drugs and gave the patient 100 mg phenobarbital tablets 3 times a day. Patient feels drowsy after taking phenobarbital, but she doesn't pay attention and thinks it is related to the disease. After continuing to use, she will suffer more loss of consciousness. She is transferred to the emergency ward of the hospital. According to the history of people around her about urinary infection, she is under investigation for meningitis and other causes. No finding found. After consultation with the toxicologist, a urine screen is requested and barbiturate is reported positive. Phenobarbital serum level is subsequently requested and reported. Consciousness returns with necessary treatments such as urine alkalinization. In the case of the above handing over the registration to the secretary, the pharmacist's inaccuracy and lack of checking compatibility with other drugs, the inaccuracy of the second doctor in the emergency room regarding the patient's drugs and the lack of request from the family to bring the drugs drew attention. Swiss cheese model: In every system, there are many defects, but these defects do not always lead to errors. Defects in different parts of the system occur unexpectedly and simultaneously, and a chain of these defects leads to an accident. In other words, a single error usually does not lead to an accident, because there are other layers that play a protective role and keep patient safety.

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Microbial Pathogens and Antibiotic Resistance Pattern among ICU Patients in a Tertiary University Hospital in Northeastern Iran: A Concerning Health Alert

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ARTICLEINFO

Posters

Keywords:
Intensive care unit,
Microbial drug resistance,
Microorganisms

ABSTRACT

Introduction: Microbial infection is the main cause of mortality among patients hospitalized in the ICU. This study aimed to determine the frequency of microorganisms isolated from ICU patients and to assess the antibiotic resistance pattern.

Materials and Methods: The study analyzed 6,462 culture samples taken from ICU patients. Among the studied cultures, 2302 were positive for microorganisms (35.6%). The bacteria were identified based on CLSI standard guidelines. All ICU culture samples were analyzed for sample sources, identified microorganisms, and antibiotic resistance patterns using SPSS software.

Results: Among the isolated bacteria in the ICU, the most common pathogens were *Acinetobacter* (34%), *Klebsiella pneumoniae* (28.6%), and *Pseudomonas aeruginosa* (12.7%). Most isolated *Acinetobacter spp* (93.4%), *Staphylococcus epidermidis* (84.6%), and *Stenotrophomonas* (80%) were resistant to the available antibiotics used in the disk diffusion method. The lowest resistance was observed in *Staphylococcus aureus* (44.7%), *Klebsiella oxytoca* (50%), and *Escherichia coli* (60.3%). During the study, total antibiotic resistance increased from 75.6% in 2018 to 83.5% in 2019.

Conclusion: Our findings indicate that *Acinetobacter*, *Klebsiella pneumoniae*, and *Pseudomonas aeruginosa* are the most prevalent pathogens in the studied ICU. Although hospital-acquired Acinetobacter species are well-known for their significant antibiotic resistance, the bacteria are still highly susceptible to doxycycline. Overall, the study highlights high antibiotic resistance in the ICU, with multi-drug-resistant bacteria being particularly prevalent. These findings highlight the life-threatening risk of multidrug-resistant bacterial infections in ICUs and underscore the need for improved infection control policies and strategies.

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Modeling and Simulation of the Possible Routes of Transmission of Acinetobacter spp. in the Intensive Care Units: An Agent-Based Computational Study

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ARTICLEINFO

Posters

Keywords:
Cross infection, Mechanical ventilation, Agent-based model, *Acinetobacter*, Intensive care units.
Molecular Analysis of Human

ABSTRACT

Introduction: Healthcare-associated infections (HAIs) are serious adverse events that mostly occur in intensive care units (ICUs). Across different infection types, ventilator-associated events (VAE) are of particular concern. Thus, using an agent-based model, we attempted to identify the risk factors that could conceivably be implicated in the transmission of *Acinetobacter spp*. in ICU settings.

Materials and Methods: For the purpose of this computational study, we designed an agent-based model of patients in a regional network of four hospitals in Mashhad, Iran from April 2017 to September 2019 and measured all necessary parameters for the model input. Net Logo was utilized for implementing agent-based model, and R for the data analysis and design of experiments.

Results: A total of 4677 HAI events were recorded in ICUs. *Acinetobacter spp.* (21.8%) were the most common pathogens isolated from ICU patients, followed by *Klebsiella spp.* (13.2%) and *Staphylococcus spp.* (12.2%). HAIs in the first place in the form of VAE (37.7%) were caused by *Acinetobacter spp*. in more than half (58.5%).

Conclusion: The simulation methods such as agent-based modeling will be useful for intervention and management planning, futurism and reduce mortality and costs. Using the appropriate tools to control hospital infections according the guidelines and bundle of the World Health Organization will reduce the probability of transmitting Nosocomial infections and *Acinetobacter spp.* in ICU. In this study; patient-related parameters were implied. Intervention studies recommended.

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T-Cell Lymphotropic Virus Type 1 by Single-Strand Conformation Polymorphism in Northeast Iran (Mashhad)

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ARTICLEINFO

Posters

Keywords:
HTLV-1, Molecular subtyping, SSCP analysis, Viral genotypes, Genetic diversity, Endemic transmission, Long terminal repeat, Intercommunity transmission

ABSTRACT

Introduction: Human T-lymphotropic virus type 1 (HTLV-1) infection is endemic in the northeastern region of Iran. Molecular subtyping of HTLV-1 is crucial for understanding its transmission pathways and implementing effective prevention strategies.

Materials and Methods: The single-strand conformation polymorphism (SSCP) analysis was utilized to evaluate of HTLV-1. The assay was designed to target a highly variable region in the long terminal repeat and was shown to be able to detect single nucleotide changes in HTLV-1.

Results: Analysis of 53 HTLV-1 samples showed almost identical SSCP patterns. SSCP results suggesting the presence of similar viral genotypes and, therefore, supporting the likelihood of intercommunity transmission of HTLV-1 in this area. This study provides important insights into the molecular epidemiology of HTLV-1 in Northeast Iran, specifically in Mashhad. Using SSCP analysis, a high degree of viral homogeneity was observed, suggesting limited genetic diversity. This likely reflects long-term endemic transmission, primarily through vertical and sexual routes. The relative isolation of the population and the virus's low mutation rate may have contributed to the observed genetic stability.

Conclusion: The findings suggest that HTLV-1 has been circulating in this region for an extended period rather than being a recent introduction. This emphasizes the need for targeted public health strategies, including screening and education to prevent further transmission. Future studies should utilize genetic sequencing for a more detailed understanding of HTLV-1's genetic diversity and distribution in Iran.

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Nanomedicine as a Novel Therapeutic Strategy for Human Monkeypox: A Narrative Review

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ARTICLEINFO

Posters

Keywords:
Human Monkeypox, Nanomedicine, Viral infections, viral illness

ABSTRACT

Introduction: Human monkeypox, a rare viral illness transmitted from animals to humans, was initially discovered in 1970 and has historically been limited to central and western Africa. While previously considered a mild disease, recent global outbreaks have highlighted its potential for wider spread. This shift underscores the need for increased vigilance and preparedness to address this emerging health threat. Despite the lack of a proven treatment for human monkeypox and ongoing debate about vaccine necessity, nanomedicine research has explored the potential of nanoparticles as a therapeutic option for viral infections like monkeypox. This literature review examines recent advancements in using nanoscale medicine as a novel approach to combat the *human monkeypox virus*.

Materials and Methods: The authors conducted a comprehensive search across multiple academic databases, including PubMed, Scopus, Web of Science, and Google Scholar, focusing on peer-reviewed literature. They used a mix of keywords, such as "Monkeypox" and various nanoparticles, to identify articles on nanoparticle treatments for Monkeypox. This careful strategy ensured coverage of relevant research on the topic.

Results: considering the lessons learned from the COVID-19 pandemic, a nanomedicine-based preventative strategy for viral diseases like Monkeypox could be a valuable approach. Traditional drug treatments often pose significant risks to public health, such as drug resistance and adverse side effects. Nanomedicines, utilizing nanomaterials, offer potential advantages over conventional therapies. For instance, silver nanoparticles coated with simple polysaccharides could be explored as a potential treatment. Additionally, targeting the virus with multivalent nanomaterials, which have a stronger affinity for target molecules than monovalent ligands, could be beneficial. These multivalent interactions are crucial for biological processes like signal processing, adhesion, and recognition.

Conclusion: In summary, given the limited therapeutic options for Monkeypox, nanoparticle technology offers a promising avenue. Increased investment in nanoparticle research is essential to explore its potential applications for Monkeypox management and treatment. By understanding nanoparticle properties, researchers may develop novel approaches to enhance existing protocols or create new therapies, ultimately improving patient outcomes.

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Patterns of Bacterial Distribution and Antibiotic Resistance in Bloodstream Infections among ICU and Non-ICU Patients: A 14-Year Study at a Tertiary Hospital in Iran

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ARTICLEINFO

Posters

Keywords:
Antibiotic Resistance, Intensive Care Units, Methicillin-Resistant *Staphylococcus aureus,* vancomycin-resistant *Enterococci,* extended-spectrum beta-lactamase carbapenem resistance

ABSTRACT

Introduction: Bloodstream infections (BSIs) represent a serious and potentially life-threatening health problem with a high morbidity and mortality rate. The predominant microbial distribution in intensive care units (ICUs) and non-ICUs wards were investigated to provide more effective and appropriate treatment for patients.

Materials and Methods: In this retrospective cross-sectional study, blood cultures sent to Professor Alborzi Clinical Microbiology Research Center in Nemazi Hospital between 2010 and 2024 were included. Positive cultures were analyzed for pathogen type and antibiotic susceptibility testing was performed by Kirby Bauer Disk Diffusion method, according to CLSI guidelines. Methicillin resistance *Staphylococcus aureus* (MRSA), was detected using cefoxitin disc. Extended-spectrum β-lactamases (ESBL) was confirmed with CLSI double disc method.

Results: Over 14 years of research, we included 1,036 blood culture specimens from ICU patients suspected of BSIs and 6462 from non-ICU patients. 2137 blood cultures specimens did not provide information about the ward of origin, were excluded from the study. The major bacterial isolates in ICU wards were *Stenotrophomonas maltophilia* (Pma) (17%), *Enterococcus spp.* (14%), *Acinetobacter baumannii* (13%), *Klebsiella (K.) pneumonia* (9%), and *Escherichia (E.)coli* (7%), while in non-ICU wards, Pma (21%), E. coli (11%), *Staphylococcus aureus* (9%), *Pseudomonas spp*. (8%), and *Enterococcus spp*. (7%) were the most prevalent. MRSA was found in 73 % of ICU and 40 % of Non-ICU wards. (P-value=0.18) In ICU and Non-ICU wards, 77% and 61 % of *Enterococcus spp.* were found to be Vancomycin-resistant. (P-value=0.07) ESBL producers in Enterobacteriaceae were more prevalent in ICU wards (78 %) compared to Non-ICU wards (60 %). (P-value=0.08) Carbapenem resistance (CR) was found in a high percentage of *Acinetobacter spp.* (93 % in ICU and 69 % in Non-ICU) (P-value=0.09) and *K. pneumonia* (65 % in ICU and 52 % in Non-ICU). (P-value=0.07) The prevalence of CR *Pseudomonas spp.* was also substantial, with 40% and 28 % found in ICU and Non-ICU wards, respectively. (P-value=0.11)

Conclusion: The higher resistance rates were detected in ICU wards. This information indicates that data on drug resistance monitoring in the ICU and non-ICU should be analyzed separately and provided to physicians for selecting empirical antibiotic regimens in various clinical situations.

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Periorbital Edema as the Presentation of COVID -19 in Children: A Case Report

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ARTICLEINFO

Posters

Keywords:
Child, COVID -19, Fever, Periorbital Edema

ABSTRACT

COVID-19 is a new respiratory infection caused by the Coronavirus, which the World Health Organization (WHO) declared a global pandemic in 2019. The clinical course of the infection in children differs from adults. With a variety of presentations, COVID-19 poses a great diagnostic challenge for physicians. Here, we present a child with COVID-19, who presented with fever and periorbital edema. Case Report A 3 -year -old boy was referred to the pediatric emergency department of the University Hospital in Zahedan - Iran with a chief complaint of fever and periorbital edema. The patient was initially visited by a pediatrician. The fever of 39°C started 4 days before hospitalization. The patient had developed periorbital edema on the day before the visit. He complained of weakness, lethargy, and anorexia. Cough, respiratory symptoms, and gastrointestinal symptoms were not mentioned. He was in good health, had normal development and, denied a history of food and drug allergies, hemorrhagic disease, heart disease, tuberculosis, bronchiolitis, or asthma. The family history for the mentioned conditions was negative as well. The child was vaccinated according to the national vaccination program. His laboratory tests revealed only hypoalbuminemia and he had no prior history of any other diseases. His nasopharyngeal swab PCR came back positive for Covid-19. Conclusion: Fever and periorbital edema are rare manifestations of COVID-19 in infected children, further medical research is required to find the cause of this problem. Finding the scientific explanation for this complication can lead to better insight for diagnosis and even reveal possible effective treatments.

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Prevalence and Antibiotic Resistance Pattern of Bacteria Producing Broad-Spectrum Beta-lactamases in Clinical Samples of Akbar Hospital

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ARTICLEINFO

Posters

Keywords:
Extended Spectrum Beta-Lactamases, Children, Antibiotic Resistance

ABSTRACT

Introduction: Extended-spectrum beta-lactamases (ESBL) are enzymes that show resistance to most beta-lactam antibiotics. Infections caused by these bacteria usually have dire consequences. In order to continuously monitor the status of antibiotic resistance, it is necessary to conduct frequent epidemiological studies so that the necessary measures can be taken to reduce the growth of resistance based on their results. The present study was conducted with the aim of determining the prevalence and antibiotic resistance pattern of bacteria producing ESBL in clinical samples of Akbar Hospital.

Materials and Methods: This study was conducted cross-sectionally and using the WHO net database of a hospital in the Akbar children hospital during two full years (2020-2021). The obtained information was analyzed by SPSS v21 software.

Results: A total of 678 isolates of bacteria producing ESBL were identified. Most isolates were reported in the age group of 1-4 years. In terms of the inpatient department, the most isolates were reported from PICU (30.8% in 2020 and 26.7% in 2021). The most common organisms producing ESBL was *Escherichia coli* (37.2% in 2020 and 44.2% in 2021). After *Escherichia coli*, in 2020, *Klebsiella pneumoniae* (20%) and *Acinetobacter* (18.8%) were common, and in 2021, *Klebsiella pneumoniae* (14.4%) and Gram-negative non-fermenting bacilli (12.4%) were common. Most isolates were reported from urine samples (49.6% in 2020 and 41.4% in 2021). In 2020, almost all isolates whose resistance was measured were resistant to ampicillin, piperacillin, ceftriaxone, cefotaxime, cefoxitin, cefixime, aztreonam, gentamicin and clindamycin antibiotics. In 2021, almost all isolates were resistant to ampicillin, clavonic acid, cefazolin, cefotaxime, cefoxitin, cefixime, imipenem, ofloxacin, clindamycin and erythromycin. The lowest resistance in 2020 was to colistin (6.7%).

Conclusion: Based on the results obtained in the present study, a significant part of the organisms with ESBL are from urine cultures. Almost all these organisms are resistant to ampicillin, clindamycin and third generation cephalosporins. Considering that some of these organisms are resistant to carbapenems, it is necessary to pay attention to the antibiogram to choose the right antibiotic.

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Prevalence and Associated Factors of Oropharyngeal Candidiasis in Hemodialysis Patients

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Posters

Keywords:
Candidiasis, Oral, Renal dialysis, *Candida albicans*, Iran

ABSTRACT

Introduction: Chronic kidney disease represents a significant public health challenge globally, affecting over 10% of the world's population. Individuals on hemodialysis are particularly vulnerable, often being immunocompromised and thus at an elevated risk for various infectious diseases, including oropharyngeal candidiasis (OPC). OPC is the most common mycotic infection, affecting the oral mucosa. This study aimed to investigate potential risk factors associated with OPC in Hemodialysis patients (HDP) with the goal of enhancing management strategies for this condition among affected individuals.

Materials and Methods: This survey represents a cross-sectional study conducted at Birjand University of Medical Sciences. Oral samples were collected from patients exhibiting clinical symptoms of OPC and inoculated onto CHROMagar™ Candida medium (CHROMagar™, Pioneer, Paris, France) plates, followed by incubation for 48 hours at 35 °C. The identification of Candida species was based on the coloration of the colonies on the chromogenic medium, complemented by molecular techniques such as MSP-1 PCR-RFLP method and partial amplification of the hyphal wall protein 1 (HWP1) gene.

Results: Of the 158 HDP under study, 62 cases (39.2%) had positive OPC. *C. albicans* strain (57.5%) was still the most frequent species followed by *C. glabrata* (23.75%). In the final model of multiple logistic regression analysis dialysis duration (OR = 7.48; CI = 1.31-2.05; p 0.001), gender (OR = 3.07; CI = 1.12-8.39; p = 0.02) and smoking (OR = 7.48; CI = 1.98-28.31; p = 0.003) were the predictors of Oropharyngeal candidiasis among HDP.

Conclusion: Our findings highlight that OPC is a significant opportunistic infection among dialysis patients, often overlooked in developing countries. The results underscore the necessity for vigilant screening for OPC, particularly in high-risk groups such as smokers, men, and those undergoing prolonged dialysis. This proactive approach is essential for improving patient outcomes and ensuring timely intervention in this vulnerable population.

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Prevalence of Covid-19 in Patients with Pulmonary Tuberculosis Diagnosed in Hamadan Province during One Year after the Onset of Covid-19 Epidemic

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ARTICLEINFO

Posters

Keywords:
COVID-19, tuberculosis, Prevalence

ABSTRACT

Introduction: Severe acute respiratory syndrome, which was identified as the cause of this disease by the coronavirus and started in China, may be a risk factor for contracting the disease of covid-19. However, the actual impact of tuberculosis (TB) disease on the occurrence and clinical results of covid disease is not fully known.

Material and Methods: This study is a case series study that was conducted in Hamadan province in 2020-2021. The target population was all patients with tuberculosis in the years 2019-2020, all patients were included in the study, sampling method was not used, and tuberculosis data were included in the study as the total number of positive cases. Data collection was done in 3 ways from the TB reference laboratory, Hamedan University of Medical Sciences, and the checklist designed based on past studies.

Results: Based on the findings, it was found that the prevalence of covid disease in disabled people was higher than the prevalence of covid disease in other people of Hamedan province, and having an underlying disease and increasing age, as well as smoking, led to an increase in hospitalization in disabled people with covid. However, there was no significant relationship between the place of residence, occupation and gender in the rate of contracting the disease of covid-19 among disabled patients.

Conclusion: The results of this study showed the increase in the prevalence of covid among TB patients and the role of underlying disease and age as well as smoking which has led to an increase in the hospitalization rate of patients.

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Prevalence of Febrile Seizures among COVID-19 Children in Iran

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Posters

Keywords:
Children, Fever and seizures, COVID-19

ABSTRACT

Introduction: Febrile seizures (FS) are seizures that occur in young children and are associated with high body temperature. Febrile seizures are the most common neurological emergency in children. Considering the increased prevalence of febrile seizures worldwide following the emergence of the omicron variant and the limited information in this field in Iran, this research aimed to investigate the prevalence of FS among COVID-19 (coronavirus disease-2019) children in Akbar Children's Hospital in Mashhad, Iran.

Materials and Methods: All patients under 14 years of age, who were hospitalized and diagnosed with COVID-19 in Akbar hospital from March 2020 to 2022 were included in this study. The incidence of FS was determined in this group. Also, all patients who were diagnosed with FS, tested negative for COVID-19, and had no underlying diseases were included in the control group. Hospital information system (HIS) was used to extract the desired information.

Results: A total of 220 COVID-19 and 190 FS patients were admitted to the hospital during the study period. Out of the 220 COVID-19 children, eight (3.60%) had febrile seizures, of whom 50% were male, and their average age was 13.9±6.96 months. Also, five (62.5%) children had simple FS, and three (37.5%) children had complex FS. According to the laboratory test results, one (12.5%) patient had leukopenia, and one (12.5%) patient had lymphopenia. In addition, five (62.5%) had pneumonia symptoms, four (50%) had fever, three (37.5%) had tachycardia, and two (25%) had tachypnea symptoms. There was no significant difference between COVID-19 patients with and without FS in terms of gender, clinical symptoms, and the incidence of leukopenia and lymphopenia (p 0.05). The average age of patients with both COVID-19 and FS was significantly lower than that of patients with either COVID-19 or FS (p=0.03 and 0.01, respectively). Complex FS was significantly more prevalent in FS patients with COVID-19 than in FS patients without COVID-19 (p=0.01).

Conclusion: There are several potential mechanisms through which febrile seizures could occur. Considering that the exact mechanism of febrile seizures in COVID-19 patients is still unknown, it is necessary to conduct more studies in this field.

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Prevalence of Influenza A/B Virus among COVID-19 Patients in Iran: A Systematic Review

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ARTICLEINFO

Posters

Keywords:
COVID-19, Non-COVID-19, Influenza, Coinfection

ABSTRACT

Introduction: Coronavirus disease 2019 (COVID-19) is an infectious disease with an unprecedented transmission rate. There are limited data on the prevalence of influenza A/B virus among COVID-19 patients in Iran. Considering that COVID-19 coinfection with other respiratory pathogens complicates its diagnosis, treatment, and prognosis, this systematic review aimed to evaluate the prevalence of influenza co-infection among COVID-19 positive Iranian population.

Materials and Methods: A comprehensive literature search was performed in electronic databases including Google Scholar, Scopus, PubMed, and Web of Science to find relevant articles published in English from December 2019 to July 2024 using relevant keywords. All original studies that investigated the prevalence of influenza coinfection among COVID-19 patients in Iran were included. PRISMA (preferred reporting items for systematic reviews and meta-analyses) guidelines were followed to validate the search process and present the eligible research data.

Results: A total of 631 studies were recognized in electronic databases, among them nine articles meeting the inclusion criteria were included in this study. These studies were conducted in Tehran, Shiraz, Mashhad, Bojnord, Isfahan, and Hamadan, comprising a total of 5195 COVID-19 and 228 co-infected patients. The prevalence of influenza coinfection among COVID-19 patients was 4.38%. Most of the co-infected cases were caused by influenza A virus. The prevalence of coinfection was higher among patients aged 18-60 and over 60 years than in people younger than 18 years, respectively. The majority of COVID-19 patients were male, while the frequency distribution of coinfection was almost the same in both sexes.

Conclusion: The findings suggest that the prevalence of COVID-19 and influenza coinfection is low. However, the importance of this issue should not be ignored, and influenza vaccination in high-risk groups including the elderly and hospitalized patients is highly recommended due to the possibility of severe complications.

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Prevalence, Antimicrobial Resistance, and Molecular Characteristics of Coagulase-Negative Staphylococci Isolated from Children's Blood Cultures in Northeastern Iran Within 2013 - 2019

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ARTICLEINFO

Posters

Keywords:
Staphylococcus, Coagulase Drug resistance, Polymerase Chain Reaction

ABSTRACT

Introduction: *Coagulase-negative Staphylococci* (CoNS) are rolled in severe infections in animals and nosocomial infections in humans. Given that *Staphylococci* other than Staphylococcus aureus are often reported only as CoNS in medical diagnosis laboratories, this study aimed to determine the exact species of this type of staphylococci in clinical samples. This study also aimed to evaluate antibiotic resistance, the ability to carry cfr, qacA/B, mecA, and vanA genes, and the diversity of Staphylococcal cassette chromosome mec (SCCmec) elements in mecA-carrying isolates.

Materials and Methods: *Staphylococcus spp*. strains were isolated from the blood samples of children admitted to Imam Reza Hospital in Bojnurd, Northeastern Iran, between 2013 - 2019. All CoNS isolates were evaluated for resistance to vancomycin and oxacillin using agar screening and other routine anti-CoNS antibiotics using the Kirby-Bauer disk diffusion method, based on the latest Clinical and Laboratory Standards Institute guidelines. The CoNS strains were isolated based on conventional methods and polymerase chain reaction (PCR)-restriction fragment length polymorphism. The PCR was applied to determine the diversity of SCCmec elements in the CoNS isolates.

Results: In this study, 203 isolates were confirmed as CoNS belonging to nine *Staphylococci spp*. *S. capitis* and *S. epidermidis* were the top two common CoNS. Type III was the dominant SCCmec type in mecA + isolates.

Conclusions: The findings of this study showed that CoNS isolated from blood cultures have a relatively high diversity and antibiotic resistance. Therefore, further attention should be paid to the isolation of these strains in laboratories, and they should not be easily considered as contamination.

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Salmonella Antimicrobial Resistance and Its Role in Public Health

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ARTICLEINFO

Posters

Keywords:
Salmonellosis, Poultry, Public health, Antimicrobial resistance, AMR

ABSTRACT

Salmonellosis is a significant zoonotic illness that is widely distributed worldwide. *Salmonella* is recognized as one of the predominant human pathogens found in poultry. As commercial poultry industries have expanded globally, the connection between poultry and human *Salmonella* infections has become acknowledged. Poultry is spread throughout the human food supply. Food-related diseases are a major health risk for people worldwide, among many other potential sources of illnesses. Salmonella is the most common microorganism out of many foodborne pathogens, leading to a large number of deaths globally. Managing zoonotic Salmonella is of great importance. In animal farming, antimicrobial agents are utilized for therapy, prophylaxis, and growth promotion. *Salmonella* is a type of bacteria that has developed multiple antimicrobial resistance traits through the years, making it a zoonotic threat. Various factors, including genes found on plasmids, transposons, and gene cassettes, contribute to the development of resistance. Due to the extensive use of antimicrobials in poultry, multidrug-resistant *salmonella* is a common phenomenon, with isolates resistant to certain antibiotics classified as MDR, and those resistant to additional antibiotics as XDR. Antimicrobial resistance leads to higher rates of sickness, death, and illness-related expenses. This resistance represents a significant danger to human health due to its zoonotic significance. Salmonellosis continues to be a common food-borne disease caused by bacteria, posing a significant global public health issue. In this study, we discuss Salmonella antimicrobial resistance and its role in public health.

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Seroprevalence of Toxoplasmosis among Pregnant Women in Shiraz City, Fars Province, 1401

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ARTICLEINFO

Posters

Keywords:
Seroprevalence, Toxoplasmosis, Pregnant women, Shiraz

ABSTRACT

Introduction: Toxoplasma gondii is an intracellular parasite that infects a wide range of warm-blooded vertebrates, including humans. Epidemiological studies have shown that there is a high prevalence of infection with this parasite in different parts of the world. This cross-sectional study was conducted to evaluate the seroprevalence and risk factors associated with Toxoplasma infection among pregnant women in Shiraz city, Fars Province.

Materials and Methods: A total of 203 blood samples were collected from pregnant women referred to Zainbiah Hospital in Shiraz city. A structured questionnaire, containing demographic data, was completed for each participant. Sera were evaluated for anti-Toxoplasma antibodies, using Human Anti-Toxoplasma gondii IgG ELISA kit.

Results: Among 203 pregnant women, the mean age was 31.99±6.954 years. Anti-Toxoplasma IgG antibodies were detected in 22 (10.8%) of the 203 pregnant women. The association between Toxoplasma infection and age, contact with cats, place of residence, level of education, number of births, history of abortion, and history of premature birth were not statistically significant (P-value≥0.05).

Conclusion: The findings of the study revealed the prevalence rate of toxoplasmosis in pregnant women in Shiraz was lower than most studies. Considering that Toxoplasma contamination in pregnant women can cause irreparable complications for the mother and the fetus, prevention and control programs are necessary to prevent the transmission of Toxoplasma infection to the pregnant women.

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Smart Sensing Technology for Continuous Monitoring of Antimicrobial Effectiveness in Wound Treatment

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ARTICLEINFO

Posters

Keywords:
Antimicrobial, Wound, Treatment

ABSTRACT

Introduction: Monitoring the effectiveness of antimicrobial treatments in wound infections is critical for ensuring timely and appropriate therapeutic interventions. The advent of smart sensors integrated into wound dressings allows for continuous, real-time monitoring of the wound environment. This systematic review evaluates the role of smart sensors in detecting and monitoring antimicrobial interventions in infected wounds.

Materials and Methods: A systematic literature review was conducted in PubMed, Web of Science, and Scopus databases for studies published between 2010 and 2023. The search terms included "smart sensor," "wound infection," "antimicrobial monitoring," and "biosensor wound dressing." Studies that assessed the efficacy of smart sensors in wound care were included for analysis.

Results: Smart sensors embedded in wound dressings were found to be highly effective in monitoring key indicators of infection, such as pH levels, temperature, and bacterial load. The integration of these sensors enabled real-time feedback on the effectiveness of antimicrobial interventions, allowing for adjustments in treatment. Studies highlighted that the use of such sensors reduced the time to detect infection and improved overall healing outcomes by providing clinicians with actionable data.

Conclusion: Smart sensors in wound dressings represent a significant advancement in infection management. Their ability to monitor antimicrobial interventions in real-time enables more personalized and responsive treatment strategies, improving patient outcomes in both acute and chronic wound infections.

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Some Virulence Genes are Associated with Antibiotic Susceptibility in Enterobacter cloacae Complex

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ARTICLEINFO

Posters

Keywords:
Enterobacter cloacae complex, Virulence gene, Antibiotic resistance, MDR, Antivirulence

ABSTRACT

Introduction: *Enterobacter cloacae* complex (ECC) including different species are isolated from different human clinical samples. ECC is armed by many different virulence genes (VGs) and they were also classified among ESKAPE group by WHO recently. The present study was designed to find probable association between VGs and antibiotic susceptibility in different ECC species.

Materials and Methods: Forty-five *Enterobacter* isolates that were harvested from different clinical samples were classified in four different species. Seven VGs were screened by PCR technique and antibiotic susceptibility assessment was performed by disk-diffusion assay.

Results: Four *Enterobacter* species; *Enterobacter cloacae* (33.3%), *Enterobacter hormaechei* (55.6%), *Enterobacter kobei* (6.7%) and *Enterobacter roggenkampii* (4.4%) were detected. Minimum antibiotic resistance was against carbapenem agents and amikacin even in MDR isolates. 33.3% and 13.3% of isolates were MDR and XDR respectively. The rpoS (97.8%) and csgD (11.1%) showed maximum and minimum frequency respectively. Blood sample isolated were highly virulent but less resistant in comparison to the other sample isolates. The csgA, csgD and iutA genes were associated with cefepime sensitivity.

Conclusion: The fepA showed a predictor role for differentiating of *E. hormaechei* from other species. More evolved iron acquisition system in E. hormaechei was hypothesized. The fepA gene introduced as a suitable target for designing novel anti-virulence/antibiotic agents against *E. hormaechei.* Complementary studies on other VGs and ARGs and with bigger study population is recommended.

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Stenotrophomonas Maltophilia in Bloodstream Infections and Antibiotic Susceptibility

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ARTICLEINFO

Posters

Keywords:
Stenotrophomonas maltophilia, Antibiotic Susceptibility, Shiraz

ABSTRACT

Introduction: *Stenotrophomonas. Maltophilia* is a Gram-negative, non-fermenting, motile, multi-drug-resistant organism that can cause Bloodstream Infections. *S. maltophilia* is considered an emerging opportunistic pathogen in hospital. Among the non-fermenting gram-negative bacilli, *Pseudomonas aeruginosa*, *Acinetobacter baumannii*, *S. maltophilia*, and *Burkholderia cepacia* complex (BCC) were the commonly isolated, clinically significant bacteria. The aim of this study was to examine the prevalence and antibiotic resistance of *S. maltophilia* bloodstream infections in hospitalized patients in Shiraz, Iran.

Materials and Methods: This is a retrospective study conducted over a period of two years, March 2022 to March 2024. All blood culture samples received to Professor Alborzi Clinical Microbiology Research Center during the study period were processed using standard microbiological procedures. All bottles were placed into BACTEC 9240 Automatic System. After the positive bottles were detected by machine, the bacteria were identified and antibiotic susceptibility tests were performed by using biochemical standard test and Kirby- Bauer Disk Diffusion method, according to the Clinical and Laboratory Standards Institute guidelines (CLSIs).

Results: Overall, 996 pathogenic isolates were registered over study periods. Total 398 (40.0%) Nonfermenting Gram-Negative Bacilli (NFGNB) positive samples were detected, that among them 398 (44%) was *S. maltophilia*. When the antibiotic resistance profiles were checked, it was seen *S. maltophilia* strains were highest susceptibility to Trimethoprim/Sulfamethoxazole (92%) and Chloramphenicol (73 %).

Conclusion: *S. maltophilia* is difficult to treat due to the production of multiple intrinsic and acquired mechanisms of resistance. In this study showed the trimethoprim-sulfamethoxazole best activity against *S. maltophilia* isolates but the treatment of *S. maltophilia* exhibits intrinsic resistance to many available broad-spectrum antibiotics. Consequently, an appropriate antimicrobial therapy is often delayed and bloodstream infections is a significant management challenge.

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Study of Antibiotic Resistance and Genetic Identification of Clinical Isolate of Escherichia coli and Evaluation of Frequency of Metalobetalactamas Antibiotic Resistance Gene by PCR Method

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ARTICLEINFO

Posters

Keywords:
Urinary tract infection, *E. coli*, Antibiotic resistance, Beta-lactam, Cephalexin

ABSTRACT

Introduction: Urinary tract infection (UTI) is one of the most common bacterial infections. Among the types of hospital infections, urinary tract infection caused by *Escherichia coli* is the most important and prevalent and constitutes about 75-90% of the isolated cases. *E. coli* is responsible for 80-90% of community-acquired urinary tract infections and 40-50% of hospital-acquired infections and is called uropathogenic *Escherichia coli* (UPEC). Considering the increasing resistance of UPEC strains to antibiotics and the different effects of different types of extended-spectrum beta-lactamase (ESBL) enzymes on different antibiotics, accurate genetic determination of clinical strains of *Escherichia coli* causing urinary tract infections and evaluation of resistance gene frequency with molecular methods PCR is very important in terms of recognizing regional resistances. This study aimed to evaluate the frequency of antibiotic resistance genes of E. coli strains isolated from human infections in relation to beta-lactams, by examining the presence of genes encoding bla-IMP antibiotic resistance.
Material and Methods: one hundred *E. coli* strains isolated from urinary tract infections of patients admitted to Shahid Beheshti Hospital in Hamedan were collected. DNA of the confirmed strains was extracted after additional biochemical tests and cultivation on differential media. PCR was performed using antibiotic resistance gene-specific primers.
Results: In total, the frequency of the bla-IMP resistance gene was 25%. 97% of the strains were resistant to penicillin, 82% to cephalexin, and 69% to cefixime.
Conclusion: To prevent outbreaks of antibiotic resistance in hospitals, identification of carbapenemase-producing bacteria and effective antibiotic treatment and identification of the bacteria causing infection from patients should be done seriously. Genotypic methods and phenotypic methods are very valuable for detecting antibiotic resistance, especially in epidemiological studies.

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Study of Pediatric Hydatid Cysts: Insights from A Tertiary Hospital in Southern Iran

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ARTICLEINFO

Posters

Keywords:
Parasitic Diseases, Hydatid Disease, *Echinococcus*, Child, Iran.

ABSTRACT

Introduction: Echinococcosis is a parasitic infection caused by the parasites *Echinococcus granulosus* and *Echinococcus multilocularis*, particularly prevalent in areas with livestock and dog interactions. This disease is classified into two types: hydatid cysts and alveolar cysts. Hydatid cysts typically develop in the liver and lungs and may remain asymptomatic until they grow large. This study investigates the etiology, clinical symptoms, diagnosis, and treatment of echinococcosis in children hospitalized in a tertiary referral hospital in southern Iran.
Materials and Methods: This study is a retrospective descriptive cross-sectional analysis that collected information from 171 children (younger than 18 years old) with hydatid cysts at Namazi Teaching Hospital from 2015 to 2022. The diagnostic criteria included the presence of cysts in relevant organs based on radiological reports and positive serological or pathological results. Collected data included demographic, laboratory, cyst location and characteristics, treatment type, and disease outcomes until discharge. Follow-up phone calls were made for 97 patients to assess treatment outcomes. Data were analyzed using SPSS software and reported as means and percentages.
Results: 171 patients with hydatid cysts were examined, comprising 58.5% males and 41.5% females, with a mean age of 8.9 years. The most common sites of involvement were the lungs (73.1%) and liver (45.5%). Clinical symptoms included cough (50.9%), fever (38.6%), abdominal pain (35.1%), and dyspnea (26.9%). In 18.7% of cases, cysts were ruptured at the time of presentation. Initial diagnosis was based on clinical symptoms in 94.2% of cases, with 5.8% diagnosed incidentally. The mean number of cysts was 2.1, and the mean size of the largest cyst was 7.5 cm. Treatments included surgical-medical (91.8%), medical alone (6.4%), and PAIR (1.8%). Albendazole was administered at a mean dose of 17.36 mg/kg. In the follow-up of 97 patients, 12.9% experienced recurrence.
Conclusion: Early diagnosis and appropriate treatment of hydatid cysts are essential to prevent serious complications. Imaging techniques and serological tests are key tools in identifying this infection. Combined treatment involving surgery and antiparasitic medications may yield better outcomes. This study emphasizes the importance of awareness regarding clinical symptoms and diagnostic methods to enable timely intervention and prevent complications associated with

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Study on Clinicopathological Features and Molecular Analysis of Central Nervous System Echinococcosis in Northeastern Iran

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ARTICLEINFO

Posters

Keywords:
Hydatidosis, Cerebral echinococcosis, Spinal echinococcosis, PCR, Phylogenetic analysis, Iran

ABSTRACT

Introduction: Cystic echinococcosis is a major socioeconomic burden in endemic regions, including developing countries, despite global control efforts. The parasite can infect various organ of human, with the brain and spine being particularly vulnerable. This research aimed to study clinicopathological features and molecular analysis of CNS echinococcosis cases in a central hospital for hydatid cyst surgery in northeastern Iran.

Materials and Methods: CNS echinococcosis cases from surgically managed human CE cases at Ghaem hospital in northeastern Iran were analyzed from 2012 to 2022. Demographic and clinicopathological data were collected for CNS echinococcosis cases and FFPE blocks were used for molecular analysis. PCR was used to amplify the CO1 gene for genotyping.

Results: The total prevalence of CNS echinococcosis cases was 1. 8%. Most cases were female (64. 7%) and from rural areas (58. 8%). The highest number of cases (41. 2%) were aged ≤18 years, with majority being ranchers (47. 1%). Thirteen cases (76.5%) were found to have cysts in their brain, particularly in the supratentorial site. Headache was the most commonly reported sign in cases (9/13, 69.2%). Infiltration of eosinophils, polymorphic inflammatory cells, and giant cells, gliosis, and foreign body granulomatous reaction, along with mild infiltration of mononuclear cells showing degeneration and necrotic foci in the brain infections. Spine infections included bone cartilage, ligaments, and hydatid cyst wall fragments. PCR analysis of 17 samples identified 13 *E. granulosus* s. l. isolates, with 11 belonging to the G1-G3 complex (6 G1, 4 G3, 1 G1-G3) and 2 to the G6 genotype.

Conclusion: Cerebrospinal infection is a significant aspect of cystic echinococcosis cases in northcentral Iran, with a higher prevalence among females and in rural areas. Children are the most affected age group, with the G1 genotype being the most common. Further research is needed to uncover unknown aspects of this issue.

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Synthesis of Copper Oxide Nanoparticles from Ephedra Major Extract and Evaluation of Their Antibacterial and Anti-Biofilm Activity against Pseudomonas Aeruginosa

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ARTICLEINFO

Posters

Keywords:
Nanoparticle, Copper oxide, Ephedra major, Antibacterial, Biofilm

ABSTRACT

Introduction: Bacteria, as the main agents of chronic infections and mortality, play a significant role in the occurrence of diseases. In the past, antibiotics have been one of the primary and highly successful methods for combating these infections. Therefore, the widespread and inappropriate use of antibiotics, especially in excessive and self-prescribed treatments, has created a significant problem. This misuse can lead to the emergence of multidrug-resistant (MDR) bacterial strains. Copper oxide nanoparticles synthesized from the extract of Ephedra major through green methods, given their important antibacterial properties, can be a suitable alternative to antibiotics.

Materials and Methods: In this study, copper oxide nanoparticles were synthesized using a green method from the aqueous extract of Ephedra major. The characteristics of the nanoparticles were confirmed using UV-vis spectrophotometry and FT-IR techniques. The antibacterial properties of the synthesized copper oxide nanoparticles were evaluated by measuring the inhibition zone and using MIC (Minimum Inhibitory Concentration), MBC (Minimum Bactericidal Concentration) methods. Additionally, the anti-biofilm properties of the synthesized copper oxide nanoparticles were qualitatively assessed.

Results: The highest inhibitory effect of copper oxide nanoparticles on Pseudomonas aeruginosa was observed at a concentration of 5000 µg/mL, resulting in a 20 mm inhibition zone. In comparison, the antibiotic chloramphenicol, at a concentration of 1000 µg/mL, produced a 15 mm inhibition zone. The MIC and MBC were determined to be 312 µg/mL and 156 µg/mL, respectively.

Conclusion: This study focuses on the biosynthesis of copper oxide nanoparticles (CuO-NPs) using the aqueous extract of Ephedra major and evaluates their antimicrobial and ant biofilm properties against Pseudomonas Aeruginosa. The nanoparticles were confirmed by color change and UV-Vis spectroscopy. The antimicrobial and ant biofilm activities of the nanoparticles were superior to those of the plant extract and the antibiotic chloramphenicol, demonstrating their ability to inhibit bacterial growth and reduce biofilm formation. The results of this research show highlight the significant potential of copper oxide nanoparticles in treating drug-resistant infections.

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Systematic Review on Traditional and New Methods for Diagnosing Mycobacterium Tuberculosis

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ARTICLEINFO

Posters

Keywords:
Mycobacterium tuberculosis, Traditional methods, Modern diagnostic, Sensitivity, Specificity

ABSTRACT

Introduction: Tuberculosis (TB), caused by Mycobacterium tuberculosis, continues to be a significant global health challenge, particularly affecting populations in developing countries. Despite advancements in medical science, TB remains one of the top infectious disease killers worldwide. Early and accurate diagnosis is critical for effective disease management, prevention of transmission, and initiation of timely treatment. This systematic review aims to examine both traditional and modern diagnostic methods for detecting Mycobacterium tuberculosis, focusing on their sensitivity, specificity, advantages, and limitations.

Materials and Methods: Traditional diagnostic methods include Sputum Smear Microscopy, which has specificity rates exceeding 90%. However, it exhibits relatively low sensitivity, ranging from 50-60%, often failing to detect cases with low bacterial loads or atypical presentations. Culture-based methods, despite being considered the gold standard for TB diagnosis due to their high sensitivity (80-85%) and 100% specificity, are notoriously time-consuming, requiring several weeks for results to be available. The Tuberculin Skin Test (TST), which has a sensitivity ranging from 70-80% and specificity between 60-90%, has significant limitations due to cross-reactivity in individuals previously vaccinated with BCG, leading to false-positive results.

Results: In contrast, modern diagnostic methods have emerged, offering improved speed, accuracy, and overall efficiency. The GeneXpert MTB/RIF test is a notable advancement, demonstrating high sensitivity (85-90%) and specificity (95-99%), providing rapid results within hours, and possessing the capability to detect rifampicin resistance. Additionally, Nucleic Acid Amplification Tests (NAATs) showcase impressive sensitivity rates of 85-95% and specificity close to 98-99%, allowing for quicker diagnosis compared to traditional culture methods. Furthermore, Interferon-Gamma Release Assays (IGRAs) offer sensitivity between 80-85% and specificity of 95-99%, making them particularly useful in identifying latent TB infections. IGRAs have the advantage of producing fewer false-positive results than TST, thereby enhancing diagnostic reliability.

Conclusion: While traditional diagnostic methods remain valuable, particularly in resource-limited settings where rapid testing may not be available, modern techniques significantly enhance diagnostic accuracy and timeliness. The integration of these advanced diagnostic modalities contributes to improved TB control efforts worldwide. Ultimately, adopting a multi-faceted approach that incorporates both traditional and modern methods can facilitate the early detection and treatment of TB, thereby reducing its impact on global health.

Keywords:

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The Challenge of Managing Latent Tuberculosis Infection in Liver Transplant Recipients: Prognostic Considerations

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ARTICLEINFO

Posters

Keywords:
Isoniazid, Alanine Transaminase, Tuberculin, Aspartate aminotransferases, Glutamates, Pyruvates

ABSTRACT

Introduction: This retrospective cross-sectional study aimed to investigate latent tuberculosis infection (LTBI) management in liver transplant recipients, assessing the impact of isoniazid prophylaxis and patient outcomes.

Materials and Methods: Data from liver transplant recipients (2013-2021) at Montaseriyeh Hospital, Mashhad, were analyzed. Inclusion criteria comprised patients with a positive tuberculin skin test (PPD) or interferon-gamma release assay (IGRA) in either the donor or recipient (n=30). Demographic, clinical, and laboratory information, including the duration of isoniazid use, liver enzyme levels, and patient outcomes, was collected. Statistical analyses included descriptive statistics, non-parametric tests, and logistic regression.

Results: Thirty liver transplant recipients received isoniazid prophylaxis (up to 9 months). Isoniazid usage duration and liver enzyme levels distribution were non-normal. The distribution of isoniazid use duration and liver enzyme levels did not follow a normal distribution. No significant increase was found in liver enzyme levels (serum glutamic oxaloacetic transaminase (SGOT), serum glutamate pyruvate transaminase (SGPT)) across different intervals. When examining each variable separately, higher SGOT and SGPT levels at the end of the first month after isoniazid consumption were significantly associated with increased mortality risk. The duration of isoniazid use and liver enzyme levels in subsequent months did not exhibit a significant relationship with patient survival.

Conclusion: Managing LTBI in liver transplant recipients presents challenges in isoniazid prophylaxis and predicting outcomes. Elevated SGOT and SGPT levels at the end of the first month after isoniazid consumption were associated with increased mortality risk. Further research is required for optimizing LTBI management in this patient population.

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The Death of a Patient with Rheumatoid Arthritis Following an Overdose of Methotrexate due to the Error of the Medical Staff

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ARTICLEINFO

Posters

Keywords:
Methotrexate, Medical error, Rheumatoid arthritis

ABSTRACT

A young man is being treated with methotrexate due to advanced rheumatoid arthritis. The doctor prescribes 3 tablets of 2.5 mg per week. The patient receives the drug. The pharmacist just draws 3 lines on the medicine box without paying attention to the prescription and the patient's understanding, and just writing 3 times(3lines). The patient used 3 pills a day and returned after about 5 days with nausea and then gum ulceration is observed. In the laboratory examination massive thrombocytopenia and leukopenia was seen. The patient is immediately treated with folinic acid and other necessary treatment But unfortunately, he died after a few day. What draws attention in this case is that despite the level of literacy of the patient, it is necessary for the doctor and the pharmacist to fully understand the use of the drug for the patient and his family. But regardless of the dangers of methotrexate overdose, Care has not been taken in explaining to the patient and not giving written and not correct language guidance. The following are noteworthy in this case for patient safety: 1- The doctor must explained the correct usage method completely to the patient and his companion. 2- The pharmacist carefully wrote on the medicine box that it should be taken 3 times a week. For example, Saturday, Monday, Wednesday. 3- The patient must visited the doctor again after receiving the drug.

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The Effect of Anti-depressants on Cytokines in Patients with Helicobacter pylori

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ARTICLEINFO

Posters

Keywords:
Cytokine,
Clomipramine, *H. pylori*,
Inflammation

ABSTRACT

Introduction: *Helicobacter pylori* (*H. pylori*) infection causes a chronic inflammatory reaction that damages the gastric mucosa. T cells, especially Th17 cells, are among the key components of neuro-inflammatory pathways that are activated in H. pylori infection and play their role by secreting cytokines. Clomipramine is a tricyclic antidepressant that has shown immunomodulatory effects in vitro. It reduces the adverse effects of glucocorticoids and pro-inflammatory cytokines and has anti-inflammatory properties. To determine the level of IL-17A, IL-22, IL-33 and IL-10 in patients with *H. pylori* infection who affected by clomipramine.

Materials and Methods: Two biopsy samples were taken from patients with indigestion and sent to the pathology laboratory for rapid urease and histopathology tests. The patient was divided into two groups (infected patients and non-infected patients). PBMC cells were isolated from the blood of participants and clomipramine treatment was evaluated in the cell culture medium. The level of different cytokines in the supernatant was determined using an ELISA kit.

Results: IL-10 levels were increased in infected patients with chronic gastritis compared to uninfected groups treated with clomipramine. Also, the level of IL-22 in active chronic gastritis patients increased significantly in the presence of clomipramine compared to the uninfected group. IL-17A and IL-33 levels in chronic gastritis patients did not change in the presence of clomipramine.

Conclusion: In the present study, the increase in the level of IL-10 in patients with chronic gastritis and no change in the levels of the two inflammatory cytokines IL-17A and IL-33 in gastritis caused by Helicobacter pylori compared to non-infected people, that may be the anti-inflammatory effects of clomipramine.

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The Effect of Chitosan Nanoparticles on ESBL-Positive Escherichia coli Isolated from Urine Samples in Hospitals of Hamadan

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ARTICLEINFO

Posters

Keywords:
ESBL, UTIs, CNPs, MIC

ABSTRACT

Introduction: Extended-Spectrum Beta-Lactamase (ESBL)-producing *Escherichia coli* (*E. coli*) are a significant cause of urinary tract infections (UTIs), particularly in hospital settings. These bacteria are highly resistant to a wide range of antibiotics, making treatment challenging. Recent studies suggest that chitosan nanoparticles (CNPs) may have potent antibacterial properties against resistant strains. This study investigates the effect of CNPs on ESBL-positive *E. coli* isolated from urine samples in hospitals across Hamadan.

Materials and Methods: In this experimental study, urine samples were collected from patients with suspected UTIs in various hospitals in Hamadan. ESBL-positive *E. coli* strains were identified using standard microbiological and molecular techniques. Chitosan nanoparticles were synthesized and characterized for size and surface charge. The antibacterial activity of different concentrations of CNPs against the isolated ESBL-positive *E. coli* strains was evaluated using the broth microdilution method to determine the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC).

Results: The results demonstrated that CNPs exhibited significant antibacterial activity against ESBL-positive *E. coli*. The MIC values ranged from 50 to 100 µg/mL, while MBC values were slightly higher. The bactericidal effect of CNPs increased with higher concentrations, showing a dose-dependent response. Notably, CNPs were effective even against strains with high levels of antibiotic resistance.

Conclusion: Chitosan nanoparticles show promising antibacterial activity against ESBL-positive *E. coli* strains isolated from urine samples in Hamadan hospitals. These findings suggest that CNPs could be a potential alternative or adjunct treatment for infections caused by resistant E. coli. Further in vivo studies and clinical trials are needed to confirm the safety and efficacy of CNPs in treating drug-resistant UTIs.

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The Effect of COVID-19 Vaccination on Mortality among Hospitalized Patients Infected with the Omicron Variant

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ARTICLEINFO

Posters

Keywords:
COVID-19, Omicron variant, Vaccine efficacy, Mortality, Hospitalized patients

ABSTRACT

Introduction: The Omicron variant of SARS-CoV-2 has sparked concerns regarding its public health implications. Vaccination remains a critical measure in preventing and controlling COVID-19 and future similar outbreaks. This research investigates the effect of COVID-19 vaccination on the mortality rates of hospitalized patients infected with the Omicron variant, offering insights into vaccine effectiveness and informing public health policies.

Materials and Methods: Conducted between January 2021 and September 2022, this study examined characteristics, clinical presentations, comorbidities, and mortality factors among COVID-19 patients in hospitals under Mashhad University of Medical Sciences in Iran. Data was gathered from the Medical Care Monitoring System, incorporating information from six medical universities. A total of 8,616 hospitalized COVID-19 patients were analyzed, with particular focus on their vaccination status (vector-based and non-vector-based vaccines) and its relationship to Omicron variant infection using logistic regression. Subgroup analyses were also performed to identify potential effect modifiers. Variables considered included age, gender, time from symptom onset to hospitalization, oxygen saturation, duration of hospital stay, and underlying health conditions.

Results: Age was found to be a significant predictor of mortality in hospitalized patients, while higher oxygen saturation levels correlated with better survival rates. Interestingly, prolonged hospital stays were linked to an increased mortality risk, possibly due to hospital-acquired infections. Booster vaccinations played a key role in lowering mortality, particularly in cases involving the Omicron variant, with specific vaccine formulations showing marked benefits. Comorbid conditions like diabetes and hypertension were associated with an elevated risk of death.

Conclusion: This study highlights the relationship between COVID-19 vaccination, patient demographics, comorbidities, and hospitalization outcomes. Mortality risk was influenced by factors such as age, oxygen levels, and booster doses, while extended hospital stays and pre-existing conditions increased the likelihood of death. The findings emphasize the importance of ongoing research and standardized vaccine classification in addressing the pandemic.

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The Effect of Demographic Findings on the Use of Masks in Children during the COVID-19 Pandemic

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ARTICLEINFO

Posters

Keywords:
Behaviors, COVID-19, Mask-wearing, Pandemic

ABSTRACT

Introduction: Based on WHO, mask wearing may prevent coronavirus disease 2019 (COVID-19) transmission. The aim of the present study was to investigate the prevalence of mask wearing and its related factors in Zahedan, southeastern Iran.

Materials and Methods: This cross-sectional study was carried out to investigate mask wearing in 408 children aged 2 to 18 years who were referred to specialized pediatric clinics at Zahedan University of Medical Sciences in Zahedan, Iran. The study ran in 2021-2022, and participants or their parents were asked about age, gender, number of children in the family, father's and mother's occupation, father's and mother's education, and family socioeconomic status. The SPSS 20 with a significance level of 0.05 was used to analyze the data.

Results: The rate of mask wearing was 61.52%. Of the children who adhered to wearing masks, 57.77 % wore three layers, 94.42% wore well-fitting masks, and 65.34 % changed their masks at least three times per day. About 53.50% of the parents of the children who refused to wear masks did not believe in this behavior, and the others had economic problems. Mask-wearing was significantly influenced by all socio-demographic factors (p 0.001).

Conclusion: It was found that 62% of the children wore masks. The majority of children who adhered to wearing masks used three layers, were adapted and changed masks at least three times per day. The majority of those who refused to wear masks did not believe in this treatment. Socio-demographic factors had a significant impact on mask wearing.

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The First Fungal Identification from Mini-BAL of Critical COVID-19 Patients

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ARTICLEINFO

Posters

Keywords:
Aspergillosis, COVID-19, Identification, Mucormycosis, Paediatrics

ABSTRACT

Introduction: Coronavirus disease 2019 (COVID-19) has become a worldwide issue due to its high prevalence and rapid transmission. Fungal infections have been detected in COVID-19 patients, leading to increased morbidity and mortality. This study aimed to isolate *Aspergillus fumigatus* and *Mucor spp*. on mini-bronchoalveolar lavage samples obtained from children with COVID-19 hospitalized in an Iranian children's hospital.

Materials and Methods: A cross-sectional descriptive study was performed on mini-bronchoalveolar lavage samples from children confirmed positive for COVID-19 admitted to ICU with a ventilator from April 2021 to February 2022. Demographic characteristics were recorded, and fungal DNA was extracted from mini-BAL samples taken from children. Nested PCR was made with two primers for *Aspergillus fumigatus* and *Mucor spp*.

Results: Out of 100 children with COVID-19, all samples were negative for *Aspergillus fumigatus*; however, 12 cases were positive for BAL PCR for *Mucor spp*. Among the 12 patients, fever, shortness of breath, cough, and decreased level of consciousness were reported in 8.3% (n: 1), 16.6% (n: 2), 25% (n: 3), and 25% (n: 3), respectively. Most cases (41.7%; n: 5) suffered from heart disease, followed by underlying malignancy (33.4%; n: 4). All positive BAL PCR for Mucor spp. cases had significantly higher chest CT scan scores and spent more time under a ventilator.

Conclusions: The identification of COVID-19 with Mucor spp. was observed among 12% (n: 12) of children hospitalized in a COVID-19 ICU. When dealing with pediatric COVID-19 patients, clinicians should consider the differential diagnosis of fungal co-infections and have a low threshold to begin treatment. Moreover, it is highly advisable to take prophylactic measures, such as properly using corticosteroids and shortening the intubation time

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The Impact of a Low FODMAP Diet and Probiotics on the Treatment of Irritable Bowel Syndrome: A Systematic Review

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ARTICLEINFO

Posters

Keywords:
Irritable bowel syndrome, FODMAP diet, Probiotics

ABSTRACT

Introduction: Irritable bowel syndrome (IBS) is a chronic functional gastrointestinal disorder that presents with symptoms like abdominal pain, bloating, and altered bowel movements. Traditional treatments often fail to provide adequate relief, leading to increased interest in complementary approaches such as the low-FODMAP diet and probiotics. The low-FODMAP diet aims to alleviate symptoms by restricting fermentable carbohydrates that are difficult to digest, thereby reducing bloating and abdominal discomfort. Conversely, probiotics enhance gut health by balancing the gut microbiome, reducing inflammation, and boosting immune function. This review aims to evaluate the efficacy of these strategies in alleviating IBS symptoms and improving patients' quality of life.

Materials and Methods: A systematic review was performed independently by two people based on the PICO criteria and aligned to the research objective and based on the PRISMA checklist and using PubMed, Medline, Cochrane, Sciencedirect, SID databases Google Scholar search engine, and Boolean operators. The time limit between 2019 and 2024 was determined using the MESH keywords " FODMAP Diet", "Probiotics " and "Irritable Bowel Syndrome". After checking the entry and exit criteria and critically evaluating the quality of the selected articles, a total of 7 articles were included in the study.

Results: Comprehensive analyzes showed that the low-FODMAP diet was significantly associated with reduced abdominal pain (30-50% on average) and bloating (40-60%). Also, a decrease in fermentation and an improvement in the speed of gastrointestinal emptying were observed in these patients. Probiotics, especially *Bifidobacterium* and *Lactobacillus* strains, helped improve gut function and reduce gastrointestinal symptoms by increasing microbiome diversity and decreasing inflammatory markers such as IL-6 and TNF-α. The combination of these two methods showed synergistic effects that led to a stronger reduction in clinical symptoms.

Conclusion: This observe suggests that the combination of low FODMAP food regimen and probiotics may be a powerful way to manage IBS signs and symptoms. But, in addition studies are had to determine extra powerful probiotic lines and to optimize the diet. Future studies should look at personalized processes and lengthy-time period outcomes to attain greater effective treatments.

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The Impact of Mobility and Mass Gatherings on Monkeypox Transmission

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ARTICLEINFO

Posters

Keywords:
Monkeypox, Zoonotic diseases, Public health, Mobility, Mass gathering

ABSTRACT

The relationship between mobility, mass gatherings, and the transmission of monkeypox has garnered increasing attention, particularly following the outbreak that began in 2022. Recent studies highlight how mass gatherings can serve as significant amplifiers for monkeypox transmission, especially in non-endemic regions. One key study by Sypsa et al. (2022) emphasizes that mass gatherings pose a heightened risk for monkeypox transmission due to the nature of social interactions in such environments. The authors note that while group contacts during events may not always involve close physical interaction, intimate or sexual contacts that occur in these settings can significantly contribute to the spread of the virus. Their simulations suggest that even a small number of close contacts can lead to multiple secondary infections, underscoring the importance of recognizing and managing these risks during large events. Another study by Banuet-Martinez et al. (2023) employs mathematical modeling to assess how public health measures can mitigate monkeypox outbreaks linked to mass gatherings. The research indicates that strategies such as targeted vaccination, contact tracing, and isolation of symptomatic individuals are crucial in controlling potential outbreaks. The findings suggest that without effective public health interventions, the risk of monkeypox transmission escalates dramatically in crowded settings. Furthermore, a review by Bragazzi et al. (2022) highlights epidemiological trends associated with mass gatherings, noting that events like pride parades have been linked to significant monkeypox transmission among specific populations, particularly men who have sex with men (MSM). This demographic has been disproportionately affected, which emphasizes the need for tailored public health responses that engage affected communities. In conclusion, the interplay between mobility and mass gatherings presents unique challenges for monkeypox transmission dynamics. Effective public health strategies are essential to mitigate risks during large social events, ensuring that communities are informed and protected against potential outbreaks. As mobility increases post-pandemic, vigilance and proactive measures will be critical in managing monkeypox transmission effectively.

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The Nosocomial Infection Survey among Patients Suffering from the Coronavirus Disease-2019 Hospitalized in Ayatollah Rouhani Hospital, Babol

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ARTICLEINFO

Posters

Keywords:
Coronavirus disease-2019, Nosocomial infection, Intensive care unit

ABSTRACT

Introduction: A weakened immune system can easily cause patients to get nosocomial infection (NI) with multi-drug resistant (MDR) bacteria and put them in a dangerous situation. It causes long hospital stays, disability, economic burden, and even death. The present study aimed to determine the prevalence of NI in patients suffering from COVID-19.

Materials and Methods: In this retrospective study, the information on 250 patients suffering from COVID-19 in the intensive care unit (ICU) (2020 to 2021) was considered. For statistical analysis, analysis of variance (ANOVA), paired samples t-test, and chi-square using SPSS-23 software were used (p0.05).

Results: Two hundred and fifty were hospitalized (107 females and 143 males, mean ± standard deviation (SD) of age; 56.50 ± 17.20) patients were considered. The most (97.60%) medicine prescribed was remdesivir. Candida spp. (two females), *Escherichia coli* (two females), *Acinetobacter spp*. (one female), *Citrobacter spp*. (one female), *Pseudomonas spp*. (one male), *Sphingomonas spp*. (one male), *Stenotrophomonas spp*. (one male) and *Enterobacter spp*. (one male) were isolated from the patient's specimens. Four of seven bacterial isolates were positive for MDR. NI was diagnosed in six patients. There was no significant relationship between the age with the isolated microbes (P=0.154) and MDR (P=0.987) and also between genders with common microbes (P=0.576) and MDR (P=0.143).

Conclusion: The coexistence of bacteria and NI was observed in patients. Remdesivir was prescribed for most patients. Most bacteria were resistant to antibiotics, especially, β-lactams.

Keywords:

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The Prevalence of Fetal and Maternal Complications Resulting From COVID-19 in Hospitalized Pregnant Women

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ARTICLEINFO

Posters

Keywords:
COVID-19, Pregnancy, Maternal health, Neonatal health, Adverse outcomes, Predictive factors

ABSTRACT

Introduction: The global COVID-19 pandemic has profoundly impacted pregnant mothers and their newborns; while pregnant women essentially exhibit similar symptoms to non-pregnant individuals, they differ in specific clinical manifestations, and a notable portion remains asymptomatic. This study aims to explore the interrelations between assorted maternal laboratory findings and symptoms concerning maternal and neonatal outcomes associated with COVID-19.

Materials and Methods: This study examined the effects of COVID-19 on childbirth by analyzing data from pregnant women who tested positive for COVID-19 and delivered at Imam-Reza Hospital in Mashhad, Iran, between April 2021 and March 2022. The data acquired included demographic, physical, laboratory, symptom, maternal outcome, and neonatal outcome variables. The data underwent comprehensive preprocessing. Variable interactions were explored using partial correlation analysis and logistic regression modeling.

Results: Using logistic regression, in this retrospective analysis of 293 mothers and their offspring, the key findings were that for preterm delivery, lower lymphocyte percentage, platelet count, and higher prothrombin time were significant independent risk factors while advancing gestational age were protective (OR 0.94). Higher maternal weight (OR 0.04) and lower CRP (OR 0.077) emerged as protective factors for intrauterine growth restriction. Stillbirth risk significantly increased with elevated ferritin (OR 10.116) and prothrombin time (OR 6.341), but higher respiratory rate (OR 0.211) and later gestational age (OR 0.781) were protective. Neonatal asphyxia was associated with increased maternal height (OR 3.67) and respiratory rate (OR 4.702), while higher lymphocyte percentage was protective (OR 0.214). Across outcomes, lower lymphocyte percentage consistently predicted higher odds of adverse events like ICU admission (OR 0.421), low birth weight (OR 0.435), and mechanical ventilation (OR 0.311).

Conclusion: Our study offers important insights into the relationship between COVID-19 in pregnant women and outcomes for mothers and newborns. Key findings highlight the roles of inflammation, coagulation, and immune response in predicting adverse events. Overlooked factors like respiratory rate and maternal height may have predictive value. Compared to other research, notable differences emerge, suggesting areas for further study.

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The Prevalence of SV40 Virus in Paraffin-Embedded Samples of Renal Cell Carcinoma and Transitional Cell Carcinoma Compared to Control Groups

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ARTICLEINFO

Posters

Keywords:
SV40 Virus, Renal cell carcinoma, Transitional cell carcinoma, Polymerase Chain Reaction, Prevalence

ABSTRACT

Introduction: The simian virus 40 (SV40) was first transmitted to human population following a contamination in polio vaccines from the monkey kidney cell cultures used to produce the vaccine in 1955-1963. In its virion structure, SV40 contains a hexamer protein called large T antigen that plays a pivotal role in viral infection and tumor formation in animals, suggesting that SV40 could be linked to cancer in humans as well. This study aimed to investigate the prevalence of SV40 virus in paraffin-embedded samples of renal cell carcinoma (RCC) and transitional cell carcinoma (TCC) compared to control groups.

Materials and Methods: A total number of 140 paraffin-embedded samples were collected from the department of pathology, Imam Reza hospital, Mashhad, Iran between 2015 and 2019. Samples included 40 RCC and 40 TCC paraffin-embedded tumoral tissues as case groups and 30 non-tumoral renal and 30 non-tumoral bladder tissues as control groups. The tissues underwent deparaffinization and DNA extraction following collection. Ultimately, the Polymerase Chain Reaction (PCR) was employed to detect the viral DNA in samples.

Results: The study involved 140 participants with an average age of 58.22±15.09 years, including 89 males (63.5%) and 51 females (36.4%). PCR testing revealed 1 positive and 79 negative results in the case group, while the control group had 2 positive and 58 negative results. The Chi-square test found no significant association between SV40 infection and presence of cancer (P-value=0.57).

Conclusion: The current research does not establish a definitive link association between SV40 and the development of renal cell carcinoma (RCC) and transitional cell carcinoma (TCC). Considering SV40's potential tumorigenic effects and its detection in various tumors, further research is necessary to explore its role in kidney and bladder cancers.

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The Role of Candida in Inflammatory Bowel Disease in Ghaem Hospital in Mashhad- 1403

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ARTICLEINFO

Posters

Keywords:
Fungus, Inflammatory bowel disease;
Ulcerative colitis;
Crohn's disease;
Pathogenesis

ABSTRACT

Introduction: Inflammatory bowel disease (IBD) including Crohn's disease and ulcerative colitis. The pathogenesis (IBD), is related to the effect of fungal presence in the gastrointestinal tract (GI) on IBD development. Fungi recently play an important role in IBD. In this study, we used routine methods to determine and investigate different types of Candida in patients with IBD. And its help to highlight the future work to find a clear understanding of IBD pathogenesis.
Materials and Methods: A stool sample was collected from patients with IBD (n25). Direct smear from stool and Calprotectin test was performed for IBD patients. We culture on Sc (sabouraud dextrose agar) medium containing antibiotics and kept in incubator for 72 h and the Fungus colony is inoculated with sterile inoculum in chrome Agar medium, after 48h based on color of the colonies and according to the guide of the manufacture of the medium ,we can detect candida species.
Results: Of 25 samples, 22 of them had fungi (*Candida*). Most people had Ulcerative colitis. There is an increased total fungal load particularly of *Candida*. The most frequently isolated species was *C. albicans* (no=9) in patients with IBD then Candida tropicalis (no=6) *Candida Krusei* (no=4) and *Candida glabrata* (no=3) were also observed in these patient. The Calprotectin test has increased significantly in affected people.
Conclusion: Gut fungi are altered in patients with Crohn's disease and ulcerative colitis. Specific Candida taxa were found to be increased in abundance in the IBD samples. Future research should focus on understanding how the fungal microbiota interacts with other components of the gut microbiota in association with the pathogenesis and development of IBD. These data emphasize the importance of candida role in disease pathogenesis IBD. In addition, predictive value of fecal calprotectin for the response of IBD patients to a particular type of treatment and it can be very helpful.

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The Role of Cytokines in The Prediction of Future Infections among Patients with Hematologic Malignancies

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ARTICLEINFO

Posters

Keywords:
Cytokine, Malignancy, Infection, Prediction, T helper subsets

ABSTRACT

Introduction: Cytokines as important immune mediators are involved in determining the pathways of immune responses and consequently the disease outcomes. As biomarkers, cytokines have the potency to predict upcoming infections. The present study aimed to evaluate the predictive role of 12 cytokines corresponding to different T helper (Th) subsets in children who suffered from hematologic malignancies (HM).
Materials and Methods: Among 65 children suspected of HM, 49 and 16 were included in the study as the case and the control groups since HM just were confirmed in the cases but not in the controls. The blood samples were collected from the study groups at the onset of diagnosis, and cases post-chemotherapy induction, and during the chemotherapy maintenance phases. The sera were isolated and 12 cytokines were assessed using the flow cytometry method. The patients were followed up for 24 months for the presentation of infection and disease outcomes.
Results: Baseline Th-related cytokines were significantly higher in the cancer-associated infection group compared to the infection-free control group. The concentrations of IL-2, IL-4, IL-6, and TNF-α were substantially higher in the patients with upcoming infection. Up-regulated IL-9 levels were associated with increased relapse and mortality.
Conclusion: Higher baseline levels of cytokines in children with hematologic malignancies may be the consequence of microorganism colonization which could be useful for predicting imminent infections and disease outcomes. However, further studies with larger sample sizes are warranted.

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The Role of Polyurethane Based Medical Equipment in Preventing Nosocomial Infections in Comparison with Medical Equipment Made of Other Chemicals, A Systematic Review

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ARTICLEINFO

Posters

Key words:
Nosocomial infections, Polyurethane, Medical equipment

ABSTRACT

Introduction: The role of polyurethane based medical equipment in preventing nosocomial infections in comparison with medical equipment made of other chemicals, a systematic review Abstract Introduction: Nosocomial infections, particularly those associated with medical equipment is an important concern in medical and healthcare system. This systematic review was conducted to determine the effects of polyurethane (PU) based medical equipment on frequency of nosocomial infections compared to equipment made of other chemicals such as PVC and silicone.

Materials and Methods: A comprehensive literature search was conducted across PubMed, Scopus and Chemical Abstracts databases for clinical trials and laboratory studies published up to 2023. Inclusion criteria focused on studies comparing the bacterial adhesion rates, biofilm formation, inflammatory responses and clinical infectious outcomes associated with polyurethane medical equipment versus those made of PVC, silicone or other materials.

Results: A total of 18 studies met the inclusion criteria, including over 3,000 patients. The systematic review revealed that polyurethane catheters significantly reduced the incidence of urinary tract infections compared to silicone catheters and polyvinyl chloride (PVC) catheters. This advantages was revealed for PU-based implants such as craniofacial implants. Polyurethane based surfaces treated with antimicrobial agents showed a significant decrease in bacterial colonization (90%) compared to untreated surfaces. The study showed that in PU based equipment, the surface' formation of biofilm significantly decreases compared to PVC and silicone base chemicals. The results revealed the polyurethane based equipment, also enhances the biocompatibility with the human body, which decreases the need to subsequent surgeries and the risk of surgery related infections for equipment removal.

Conclusion: This study showed that medical equipment made of polyurethane demonstrates superior efficacy in reducing bacterial colonization and, are more effective in preventing nosocomial infections compared to other materials like PVC and silicone. Future research should focus on exploring long-term effects, optimizing these properties and providing more evidences for selection of best materials in medical device manufacturing.

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The Trend in Candida Albicans Antifungal Susceptibility Patterns during 11 Years in Iran

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ARTICLEINFO

Posters

Keywords:
Candida albicans, Fluconazole, Amphotericin B, Itraconazole, Voriconazole, Caspofungin

ABSTRACT

Introduction: Recently, the incidence of fungal infections by Candida species has increased in high-risk and immunocompromised ones. This study aimed to compare in vitro antifungal susceptibility patterns of *Candida albicans* isolated for 11 years in Iran.

Material and Methods: Clinical samples from immunocompromised patients were evaluated for Candida species. Identification of the Candida sp. isolates was done by PCR restriction fragment length polymorphism and sequencing, and the API 20C AUX kit. The antifungal susceptibility tests were performed according to the CLSI M27, M59, and M60 microdilution and the agar-based E-test method.

Results: In all these years (2011-2022), *Candida albicans* was the most frequently isolated from clinical samples, followed by *Candida glabrata*. The MIC90 values for *C. albicans* in 2011 against fluconazole, amphotericin B, itraconazole, voriconazole, and caspofungin were 16, 0.5, 2, 4, and 0.075 µg/ml, respectively. These values in 2017 and 2022 were 2 and 4 µg/ml, 0.25 and 0.25 µg/ml, 1 and 0.5 µg/ml, 0.125 and 0.125 µg/ml, 0.25 and 0.064 µg/ml, respectively.

Conclusion: The use of diagnostic methods for *Candida* infections and the optimal use of antifungal drugs have caused the MIC values of antifungal agents to be lower and drug-resistant strains to be less. In 2011, caspofungin was the most effective antifungal agent for the treatment of candidiasis, but in recent years, azole antifungals have been effective for the diagnosis of these infections.

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Therapeutic Strategies and Challenges of Treating Gastrointestinal Microsporidia, a Comparative Review

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ARTICLEINFO

Posters

Keywords:
Microsporidiosis, *Enterocytozoon bieneusi*, Treatment, Albendazole, Nitazoxanide, Fumagillin

ABSTRACT

Microsporidia is a diverse group of tiny, single-celled parasites that can produce spores and infect a wide range of hosts, including humans. The most common species that affects humans is *Enterocytozoon bieneusi*. This parasite poses a significant threat to individuals with weakened immune systems, such as those living with HIV/AIDS, organ transplant recipients, and people undergoing chemotherapy. If someone becomes infected, they may experience severe gastrointestinal issues, such as persistent diarrhea and difficulty in absorbing nutrients. These problems can significantly impact their quality of life and may even become life-threatening if not treated properly.Current Treatment Options Albendazole: This medication is commonly used to treat microsporidiosis by disrupting the structure of the parasite. However, it may not be effective against *E. bieneusi*, and some individuals may not experience significant improvement with this treatment. Nitazoxanide: This antiparasitic drug has shown promising results for treating microsporidiosis, especially in individuals with weakened immune systems. It works by blocking an essential enzyme that the protozoa need for energy. Research has suggested that it can be effective when albendazole fails. Fumagillin: This drug is particularly recommended for treating *E. bieneusi* infections, especially in patients with AIDS. It tends to be more effective against microsporidia than albendazole. However, its use is somewhat limited due to potential side effects such as bone marrow toxicity, and it may not be widely available. Combination Therapies: Recent studies indicate that using nitazoxanide in combination with other antiparasitic or immune-boosting medications could improve the results for patients who do not respond well to standard single-drug treatments. Challenges in Treatment • Limited Efficacy: Many treatments, particularly albendazole, are often ineffective, leading to treatment failures. • Side Effects: Adverse effects associated with some drugs, such as fumagillin, limit their use in vulnerable populations. • Delayed Diagnosis: Microsporidia infections are frequently misdiagnosed or diagnosed late due to the limitations of traditional diagnostic methods. Dealing with microsporidia poses challenges for people, with weakened systems and finding effective treatments is crucial due to the parasites resistance to current drugs, like albendazole and nitazoxanide. Research efforts must persist in order to develop treatment methods and improve.

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Using Animal Plasma Therapy against Infectious Pathogens in Humans

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ARTICLEINFO

Posters

Keywords:
Plasma therapy, Passive immunity, Immunoglobulin, Equine, Bovine, Viral infection

ABSTRACT

Plasma therapy, particularly the use of convalescent plasma, has emerged as a significant therapeutic approach in combating infectious diseases in humans. This method utilizes plasma derived from recovered individuals, which contains antibodies against specific pathogens, offering passive immunity to recipients. Historically, convalescent plasma therapy has been employed during various viral outbreaks, including the Spanish flu and more recently during the COVID-19 pandemic. The application of convalescent plasma dates back over a century, with notable efficacy observed during the 1918 influenza pandemic. Reports indicated improvements in patient outcomes following plasma transfusions, suggesting that the antibodies present could neutralize the virus effectively. The mechanism by which this therapy operates involves the transfer of immunoglobulins from donors who have successfully fought off an infection, thereby enhancing the recipient's immune response against the same pathogen. In recent years, scientific interest has surged regarding the potential of animal-derived plasma therapies. For instance, studies have explored using equine and bovine plasma to treat various infectious diseases in humans. These animal sources can provide high titers of neutralizing antibodies, which may be particularly beneficial when human plasma is scarce or when rapid intervention is necessary. The use of animal plasma presents both opportunities and challenges; while it may offer a broader range of antibody profiles, concerns regarding immunogenicity and safety must be addressed. Clinical trials have demonstrated that convalescent plasma can reduce mortality rates in severe cases of viral infections such as Ebola and SARS-CoV-2. A systematic review highlighted that patients receiving high-titer convalescent plasma had significantly lower mortality rates compared to those who did not receive treatment. However, optimal timing and dosage remain critical factors influencing the success of this therapy. Administering plasma early in the course of infection appears to maximize its benefits. Animal plasma therapy represents a promising adjunctive treatment for infectious diseases in humans. While historical data supports its efficacy, ongoing research is essential to refine protocols and ensure safety. As we navigate future pandemics, leveraging both human and animal-derived plasma could play a pivotal role in enhancing our therapeutic arsenal against infectious pathogens.

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Antimicrobial Resistance, a Global Health Issue

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Posters

Keywords:
Antimicrobial resistance, MDRO, Awareness, new antibiotics

ABSTRACT

Antimicrobial resistance (AMR) is a global health issue due to its alarming increasing rate world widely. The more AMR rate result in the more appearance of multi drug resistant-organism (MDRO), hence it can lead to harder-to-treat infections that may be more severe and have a higher risk of complications. Awareness about Antimicrobial resistance leading factors seems to be crucial first step to management. Overuse and misuse of antibiotics are significant contributors to the development of antibiotic resistance especially in cancer patients and through pandemics. When antibiotics are not taken as prescribed or are used when they are not needed, bacteria have more opportunities to develop resistance not only in human beings but also in other livestock. Improper prescription of experimental medication without laboratory evidence seems to be the other main cause. So it is high time to concern about the rational usage of antimicrobial agents meant to be the main way to break down the AMR alarming rapid rate, besides following the healthcare provider instructions, and promote practices that prevent the spread of antibiotic-resistant bacteria is helpful. Researchers are also working on developing new antibiotics and alternative treatments to combat to antibiotic resistance.

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A Case Study of the Treatment Strategies Employed to Cure a COVID-19 Patient with Multiple Infections Successfully

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Posters

Keywords:
Q Angle; COVID-19; *Klebsiella Pneumoniae, Enterococcus Faecalis*, Fungal infection

ABSTRACT

The COVID-19 pandemic has given rise to new clinical challenges in healthcare settings. One of these challenges includes a heightened risk of secondary invasive bacterial and fungal infections, which have been associated with a notable mortality rate. We report a patient with COVID-19 and bacterial and fungal infections successfully cured. A woman went to the hospital with fatigue, cough, chest and abdominal pain, nausea, and vomiting symptoms. She tested positive for COVID-19 and had underlying health conditions. She had a bacterial infection called *Klebsiella Pneumoniae*. The bacteria were resistant to many antibiotics, but colistin was effective. After 20 days in the ICU, she developed a fungal and *Enterococcus faecalis* (which was a *Vancomycin-Resistant Enterococcus* (VRE)) infection. The second bacteria were treated with linezolid. After 35 days in the hospital, she was discharged with no signs of infection. It is crucial to include proper bacterial screening and treatment when addressing COVID-19.

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A Comparative Study of the Level of Hand Hygiene in Two Consecutive Years 2023-2024 in Shahid Kamyab Hospital in Mashhad

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ARTICLEINFO

Posters

Keywords:
Hand hygiene, Nurse, Doctor, Health care workers

ABSTRACT

Introduction: Infections -related Health care is one of the biggest challenges of health care centers, which impose a lot of health costs on patients and hospitals. To reduce the occurrence of these infections, the most effective, simple and least expensive way is known observe hand hygiene by health care workers. Considering the frequent interaction between healthcare workers and patients and the vital role of hand hygiene, therefore, the aim of this study was to investigate the level of hand hygiene among health care workers, according to the number of workers in Shahid Kamyab Hospital in 2023-2024.

Materials and Methods: This Descriptive cross-sectional study was conducted on the employees of Shahid Kamyab Hospital of Mashhad in the first six months of 2023-2024. In order to collect information, the infection control supervisor (as a single observer) secretly observed the employees working in five general departments and five ICUs in five hygiene periods using the checklist recommended by the World Health Organization. The data obtained from observation were analyzed by SPSSV2018 and descriptive statistical test.

Results: The average compliance with hand hygiene in the first six months of 2023 among nurses 58%, doctors 36%, Helping paramedics and agents 48% and paramedics 34% and in the first six months of 2024 among nurses45.5%, doctors 26.66%, Helping paramedics and agents 24.01% and paramedics 17.5%, and the highest level of hand hygiene was assigned to nurses and in the situation after exposure to blood and body fluids. The results indicate that the level of hand hygiene has decreased in 2024 compared to 2023, which can be attributed to the lack of holding training classes and continuous observation and providing appropriate feedback about hand hygiene.

Conclusion: According to the results of this study, it is necessary to conduct face-to-face and virtual training classes and continuous observation and careful monitoring in the field of improving hand hygiene.

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A Systematic Review of Antibiotic Resistance in Infections during Pregnancy

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ARTICLEINFO

Posters

Keywords:
Antibiotic resistance, Pregnancy, Infection, Treatment management.

ABSTRACT

Introduction: Antibiotic resistance in pregnancy-related infections has become a serious challenge to maternal and fetal health. The rising misuse of antibiotics has complicated the treatment of many common infections, such as urinary tract and streptococcal infections.

Materials and Methods: This systematic review analyzed 20 articles published between 2019 and 2024 in databases including SID, Web of Science, PubMed, and Google Scholar. Inclusion criteria covered studies focusing on pregnant women, antibiotic resistance, and the efficacy of conventional treatments. Studies were selected if they specifically reported the types of antibiotics used, diagnostic tests performed, and microbial resistance outcomes.

Results: The studies showed that bacteria such as **E. coli** and **Streptococcus agalactiae** exhibit the highest resistance to common antibiotics, including ampicillin and macrolides. In countries with weaker healthcare systems, improper prescription of medications exacerbates this resistance. Additionally, cases were reported where infections recurred in treated pregnant women due to microbial resistance.

Conclusion: Updating prescription guidelines and conducting diagnostic tests before initiating treatment is essential. Rational and restricted use of antibiotics, combined with increased awareness among healthcare providers and patients, presents a pathway to controlling this crisis. Controlling antibiotic resistance requires collaboration among researchers, clinicians, and policymakers.

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Evaluation of Nosocomial Infections Prevalence in Selective Hospital of Mashhad

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Keywords:
Nosocomial infections, Hospital, Mashhad, Infection control

ABSTRACT

Introduction: Nosocomial infections are one of the major causes of increased morbidity and mortality as well as imposing a high cost on the health care system. Our study aimed to evaluate the prevalence of nosocomial infections in a selective hospital in Mashhad.

Materials and Methods: The present study was cross-sectional research conducted in a selected general hospital in Mashhad city for 6 months from March to September 2024. All patients admitted with no signs and symptoms of infection and presenting nosocomial infection symptoms after 48 hours of hospitalization were included in the study. Demographic data and infection details through a checklist were collected. The data were analyzed with EXCEL software.

Results: Overall, 65 cases (0.90%) of nosocomial infections were discovered and recorded out of 7169 patients hospitalized in clinical departments. The most recorded cases were related to Surgical and Gynecology departments respectively, and urinary infections, wounds, and respiratory infections were reported as the most common types of nosocomial infections. In the following, it should be mentioned that the most discovered germs were related to *Klebsiella* and *Pseudomonas* aerugnosa respectively.

Conclusion: The results show that the recorded rate of nosocomial infections is lower than the national and global average, thus more attention and control over nosocomial infections is necessary to reach standard levels.

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Comparing The Management of Vancomycin and Carbapenems in Two Similar Three-month Periods

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ARTICLEINFO

Posters

Keywords:
Management,
Vancomycin,
Carbapenems,
Antibiotics

ABSTRACT

Introduction: Trying to rationalize the use of drugs as one of the important issues of drug policies has always been considered. According to the opinion of the World Health Organization, in order to achieve the rational use of drugs, there is a need to use drugs with a suitable therapeutic effect, which can meet the clinical needs of patients with the least complications and costs, while paying attention to the dose and duration of drug use is of great importance.

Materials and Methods: The present study is a cross-sectional descriptive study that was conducted in the first quarter of 2013 at the Shahid Rajaei Educational Medical Center. The findings were based on the information extracted from the HIS system.

Results: In the study carried out according to the instructions of the ministry, during the first 5 days after the start of antibiotics and then every 5 days, consultation should be done and the form should be signed by the attending physician, infectious disease specialist and pharmacist supervisor. In order to ensure the implementation of Stewardship, in the HIS system, autostop is defined and if no consultation is done, it is not possible to register expensive antibiotics in the system. In the ICU 1, 2 and women's internal and ICU departments, the highest amount of antibiotics was used, respectively. are In the comparison of the same quarter of 1402 and 1403, the use of Carbapenems increased by 2.6% and vancomycin decreased by 4.45%, the number of hospitalized patients increased by 1.81%, and the death rate decreased by 1.74%.

Conclusion: Microbial resistance causes microbes to not respond to first-line antibiotics that are healthier, more effective, less complicated, and cheaper, and as a result, we are forced to use broad-spectrum antibiotics, which are more expensive and have more side effects. And an infection that is easily treated today will turn into a fatal and incurable disease in the future. In hospital environments, observing personal and public hygiene by patients and companions and strengthening routine disinfection such as proper hand washing by medical personnel in order to prevent the transmission of infection and careful isolation of infectious patients, especially patients with microbial resistance, can prevent the development of Effective microbial resistance

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Narrative Review of Challenges and Factors Influencing Hand Hygiene Implementation in Neonatal Intensive Care Units: A Perspective from Pediatric Nurses

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ARTICLEINFO

Posters

Keywords:
Hand hygiene, Nurses, Neonatal intensive care units

ABSTRACT

Introduction: Hand hygiene is a critical preventive measure in infection control within healthcare settings, particularly in neonatal intensive care units (NICU). Proper adherence to hand hygiene practices can significantly reduce healthcare-associated infections and improve treatment outcomes for vulnerable infants. Despite its importance, evidence suggests that adherence to hand hygiene among nurses in these units is often low. Therefore, this study aims to identify the challenges and factors influencing hand hygiene practices from the perspective of nurses working in NICUs.

Materials and Methods: This study is a narrative review conducted through searches in databases such as SID, PubMed, and Magiran, along with the search engine Google Scholar, using keywords including "hand hygiene," "nurses," "neonatal intensive care units," and their Persian equivalents. The search covered the period from 2014 to 2024, and only articles with full-text access were reviewed. Out of 34 reviewed articles, 12 were included in this study.

Results: Findings from this narrative review reveal that adherence to hand hygiene in NICUs is affected by individual, organizational, and environmental barriers. Individual barriers, such as a lack of awareness and insufficient training among nurses on the importance of hand hygiene, can lead to reduced adherence to these standards. Additionally, high workload and the psychological pressure of long shifts pose further challenges. At the organizational level, the lack of resources and adequate equipment, including limited access to disinfectants and sinks, are identified as key barriers. Organizational culture and the work environment also play a critical role, particularly in the absence of support and positive feedback from colleagues and supervisors.

Conclusion: Improving hand hygiene compliance in NICUs requires attention to multiple factors and collaboration among nurses, managers, and other healthcare team members. Continuous training, providing adequate infrastructure, and fostering a positive organizational culture can help enhance hand hygiene adherence and reduce healthcare-associated infections.

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A Survey of The Frequency of Healthcare-associated Urinary Tract Infections in Children and Their Antibiotic Resistance Patterns at Shahid Motahari Educational and Treatment Center in Urmia

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ARTICLEINFO

Posters

Keywords:
Urinary tract infection, Antibiotic resistance, Healthcare-associated infections

ABSTRACT

Introduction: Urinary tract infection is the most common hospital-acquired infection, which can lead to serious complications such as chronic kidney failure and hypertension. The inappropriate and excessive use of antibiotics leads to the development of drug resistance in microorganisms. Therefore, it is necessary to frequently identify the pathogens causing infections and the types of antibiotics effective against them. This study aimed to investigate the frequency of microorganisms causing healthcare-associated urinary tract infections and their antibiotic resistance pattern in Shahid Motahari educational treatment center in Urmia from the beginning of 2017 until the end of September 2024.

Materials and Methods: For this retrospective descriptive cross-sectional study, information on pediatric patients who developed clinical symptoms of urinary tract infection from the third day of hospitalization onward and had positive urine cultures was extracted from the INIS system between the beginning of 2017 and the end of September 2024. This information was analyzed after being identified by department liaisons and introduced to the infection control unit using a disease identification form, and subsequently entered into the INIS system after approval by a pediatric infectious disease specialist.

Results: The results showed that the frequency of healthcare-associated urinary tract infections in children is approximately 46 cases. 69.5% of hospital-acquired urinary infections recorded in the INIS system were related to females, while 30.5% were related to males. Most of the patients (45.6%) were in the age range of 5 to 14 years. Approximately 56.5% of urinary infections were related to urinary catheters. Escherichia coli, with a prevalence of 68.3%, was the most common cause of hospital-acquired urinary infections in children, showing the highest resistance (87.5%) to beta-lactamase inhibitors and the lowest resistance (33.3%) to carbapenems. Approximately 77.7% ESBL was reported.

Conclusion: Considering the results of the study, females and the use of urinary catheters are risk factors for healthcare-associated urinary tract infections. It is recommended to implement preventive policies such as using Foley catheters only when necessary, adhering to aseptic principles in healthcare, and educating patients about personal hygiene, especially for girls.

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A Systematic Review of Antibiotic Consumption Trends in Post-COVID-19 Era in Iran

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ARTICLEINFO

Posters

Keywords:
Antibiotics, COVID-19, Microbial Resistance, Iran.

ABSTRACT

Introduction: The COVID-19 pandemic has had profound effects on health behaviors and medication consumption, including antibiotics, worldwide, particularly in Iran. This systematic review aims to investigate the trends in antibiotic consumption following the COVID-19 era in Iran.

Materials and Methods: This systematic review involved searching for scientific articles in reputable databases, including PubMed, Scopus, Google Scholar, and SID. Articles published from 2020 to 2023 that addressed antibiotic use in Iran after the pandemic were selected. Keywords such as "antibiotic," "COVID," "microbial resistance," and "Iran" were utilized for the search. Inclusion criteria encompassed cross-sectional studies, clinical reports, and case studies focusing on antibiotic consumption and its changes post-COVID-19.

Results: Out of the reviewed articles, 25 met the inclusion criteria. Results indicated that in the early post-COVID period, antibiotic consumption increased due to concerns about secondary infections. However, over time, and with the implementation of prescribing control policies, this trend declined. Additionally, microbial resistance resulting from excessive use was identified as a significant challenge. This drug resistance was most notable against beta-lactam antibiotics (including penicillin and cephalosporins), quinolones (ciprofloxacin), carbapenems (including imipenem and meropenem), and macrolides (including azithromycin).

Conclusion: The trend of antibiotic consumption in Iran after the COVID-19 pandemic reflects an initial increase followed by a gradual decrease. Nevertheless, microbial resistance remains a serious challenge that requires continuous monitoring and stringent policies regarding antibiotic prescribing.

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A Systematic Review on Determining the Causative Factors and Prevention Strategy of Infections Related To Oxygen Therapy Equipment in Hospitalized Patients

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ARTICLEINFO

Posters

Keywords:
Medical devices,
Hospital problems,
Critical

ABSTRACT

Introduction: The presence of microbial agents on the surface and treatment equipment of patients in different hospital departments is an important harmful factor for health and plays a major role in causing any disease. One of the most useful equipment in all departments of hospitals is Trabi equipment, which can play an important role in reducing injuries related to keeping addicts. The present review study was carried out with the aim of determining the factors and conditions of critical systems in terms of correlation with the means of using Trabi in hospitalized patients.

Materials and Methods: This system review was conducted by searching all related scientific texts and articles in reliable databases such as PubMed, Scopus, Google Scholar and SID. Articles were searched from the beginning to 2023. The keywords "Trabi applications", "hospital injuries", and "water strategies" were used for the search. Entry features include all the articles that dealt with the materials related to Trabi devices.

Results: The results showed that the type of disinfectant used, the existence of the correct method and principles of their use in different departments, sufficient training of employees and the person in charge of disinfection, the supervision of the control committee of hospitals, the quality of water used for manometer and reduction. The movement of patients' companions can be one of the effective factors in the critical crisis caused by the diseases related to the therapy equipment in hospitalized patients.

Conclusion: The causative factors associated with convulsive devices in patients with diseases related to control and follow-up require the use of serious strategies in the field of using these devices. Key words: medical devices, hospital problems, critical

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A Systematic Review on the Impact of Hand Hygiene Practices on Patient Safety

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ARTICLEINFO

Posters

Keywords:
Hand hygiene, Patient safety, Infection control.

ABSTRACT

Introduction: Hand hygiene is one of the most critical practices for preventing healthcare-associated infections (HAIs) and ensuring patient safety. With growing global health challenges, especially during the COVID-19 pandemic, the emphasis on hand hygiene has significantly intensified. This systematic review aims to evaluate the impact of hand hygiene practices on patient safety by reviewing studies published from 2020 onward.

Materials and Methods: A systematic search was conducted in databases such as PubMed, Scopus, and Google Scholar using keywords like "hand hygiene," "patient safety," and "infection control." Studies published between 2020 and 2024 examining the relationship between hand hygiene practices and patient safety outcomes were included in this review. Inclusion criteria were English-language studies focusing on the effects of hand hygiene on reducing HAIs and improving patient safety.

Results: Among the reviewed articles, 18 studies met the inclusion criteria. Most studies confirmed that proper hand hygiene significantly reduces healthcare-associated infections, especially in intensive care units and surgical wards. One study indicated that implementing hand hygiene protocols reduced hospital-associated infections by 30%. Additionally, adherence to the World Health Organization's "Five Moments for Hand Hygiene" framework was associated with improved patient outcomes and reduced healthcare costs.

Conclusion: Hand hygiene remains a fundamental principle in infection control, with a direct correlation to enhanced patient safety. The reviewed studies show that consistent adherence to hand hygiene practices leads to a significant decrease in HAIs and an improvement in overall patient safety in healthcare settings. Future efforts should focus on strengthening hand hygiene education and compliance among healthcare workers to ensure sustained improvements.

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Accreditation in Posters Care: A Necessity with Benefits

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ARTICLEINFO

Posters

Keywords:
Posters care, Accreditation, Patient care

ABSTRACT

Accreditation in Posters is a vital process that ensures educational programs meet established standards, thereby enhancing the quality and effectiveness of Posters practice. It serves as a quality assurance mechanism, promoting ongoing professional development that helps nurses maintain competence in a rapidly evolving healthcare environment. This is crucial for ensuring high standards of patient care and safety, as highlighted by various studies which affirm the positive impacts of accreditation on Posters education and practice. The Accreditation Commission for Education in Posters (ACEN) has recently revised its standards to improve clarity and applicability across all types of Posters education, effective January 2024. This revision emphasizes competency-based education, which aligns educational outcomes with the practical needs of Posters, ensuring that graduates are well-prepared for their roles in healthcare settings. Accreditation initiatives, such as the European Cancer Posters Index, aim to enhance the quality of care by addressing disparities in Posters practices across different regions. Continuous quality improvement processes are integral to accreditation, fostering a culture of safety and excellence in Posters care. Despite its benefits, the accreditation process can introduce challenges. For instance, some studies indicate that the additional workload associated with accreditation can detract from direct patient care (1). Furthermore, staff shortages can complicate the implementation of accreditation standards, creating barriers to achieving desired outcomes (1). Nonetheless, effective leadership and organizational support are critical for overcoming these challenges and ensuring successful accreditation implementation (2). In summary, while there are complexities involved in the accreditation process, its overarching impact on enhancing Posters education and patient care remains widely acknowledged.

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Acinetobacter Infections in Pediatric Patients: Epidemiology and Drug Resistance Analysis in Intensive Care Units from a Children's Medical Center in Eastern Iran for Two Consecutive Years

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ARTICLEINFO

Posters

Keywords:
Acinetobacter infections, Pediatric patients, ICU

ABSTRACT

Introduction: This study aims to investigate the epidemiology of *Acinetobacter* infections and analyze the patterns of drug resistance in pediatric patients admitted to intensive care units (ICUs) at a children's medical center in Eastern Iran over a two-year period.

Materials and Methods: A retrospective analysis was conducted on pediatric patients diagnosed with *Acinetobacter* infections in the ICUs between 2022 and 2024. Data on demographic characteristics, clinical presentation, laboratory results, treatment regimens, and outcomes were collected. Antimicrobial susceptibility testing was performed using standard methods to assess the resistance profiles of the isolated strains

Results: A total of 78 patients with confirmed *Acinetobacter* infections were identified. The majority were under four years old, with a higher prevalence in females. The most common clinical manifestations included pneumonia, bloodstream infections, and urinary tract infections. The analysis revealed a significant increase in resistance rates to commonly used antibiotics, particularly to 3th and 4th generation cephalosporines ,carbapenems and fluoroquinolones (90%). Multidrug-resistant (MDR) strains accounted for 91% of the isolates, complicating treatment options.

Conclusion: *Acinetobacter* infections pose significant challenge in pediatric ICUs, with rising drug resistance trends observed over the two-year study period. The high prevalence of multidrug-resistant strains underscores the urgent need for enhanced infection control measures, continuous surveillance, and the development of targeted therapeutic strategies. This study highlights the importance of ongoing epidemiological research to inform clinical practices and improve patient outcomes in this vulnerable population. Further investigations are recommended to explore the mechanisms underlying resistance and to evaluate the effectiveness of new treatment protocols.

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Advances in Infection Control for Chronic Wound Care: A Multidisciplinary Review of Nanoparticles, Smart Dressings, and Stem Cell Therapies

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Posters

Keywords:
Infection control, Nanoparticles, Stem cells, Chronic wounds

ABSTRACT

Introduction: Chronic wounds continue to present significant challenges in healthcare due to their susceptibility to infection and difficulty in achieving complete healing. Advances in smart dressings, nanoparticles, particularly silver and gold, and mesenchymal stem cell (MSC) therapies have provided promising tools for controlling infections, enhancing antibacterial actions, and improving tissue regeneration. This study aims to review these technologies, emphasizing their effectiveness in controlling wound infections and their potential to transform chronic wound care.

Materials and Methods: This systematic review followed PRISMA guidelines, incorporating articles from PubMed, Web of Science, Scopus, and Embase from 2014 to 2024. Studies focused on advanced wound care technologies with specific efficacy in infection control, while studies not meeting inclusion criteria or with unsuitable designs were excluded. Of the 40 articles initially identified, 12 met the criteria for detailed analysis, providing a robust framework for reviewing advancements in infection-focused wound care technologies.

Results: The review highlighted significant progress in infection control within chronic wound management. Studies on silver nanoparticles (AgNPs) demonstrated potent antibacterial effects by disrupting bacterial cell walls and inhibiting biofilm formation, with AgNP-infused dressings effectively reducing microbial loads and accelerating wound healing (p 0.05). Gold nanoparticles (AuNPs) similarly showed intense antimicrobial action due to their stability and ability to target bacterial cells directly, contributing to more efficient infection control (p 0.05). Additional advancements in MSC therapies supported angiogenesis and tissue regeneration, further aiding chronic wound healing (p 0.01). Two studies also explored battery-free smart dressings integrating wireless drug delivery, allowing for continuous infection monitoring and intervention (p 0.05).

Conclusion: The findings underscore substantial advancements in infection-focused chronic wound care, highlighting silver and gold nanoparticles for their antibacterial properties, MSCs for their regenerative capabilities, and novel smart dressing technologies. With their transformative potential, these innovations inspire a new era in managing wound infections. Further clinical studies are recommended to validate these findings and facilitate broader implementation, paving the way for a brighter future in chronic wound care.

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Application of Artificial Intelligence in Preventing Patients from Falling; A Review Study

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ARTICLEINFO

Posters

Keywords:
Artificial intelligence, Falling risk, Patient care, Posters

ABSTRACT

Introduction: The issue of patient falls and their consequences has raised significant concerns globally, highlighting the need for improved patient care. Artificial intelligence (Al) emerges as a valuable tool in this context, effectively helping to reduce the risk of falls by predicting and identifying risk factors. Al can alert patients and their caregivers, making it an essential resource for preventing falls among patients with limited mobility, those who require assistance in moving, and those who are completely immobilized. This is achieved through the use of statistical models and data analysis.

Materials and Methods: This review study was conducted using the keywords "artificial intelligence," "fall risk," "patient care," and their equivalents in English across several databases, including PubMed, Embase, Scopus, ScienceDirect, Irandak, SID, and Magiran, from 2014 to 2024. We included clinical trial articles published in English or Farsi that focused on the performance of patients undergoing relative rest and absolute rest. A standardized data extraction form was used to collect information such as study characteristics, study population, interventions, results, and methodological quality. The research team collaborated throughout all phases of the study.

Results: The results of this review study indicate that the use of artificial intelligence positively impacts the reduction of fall rates and their associated complications. Key characteristics include the high accuracy of artificial intelligence, the innovative nature of the tool, and its potential for development through new models, which can also help lower treatment costs. However, the research conducted in this area has been limited to a small number of countries and patients with similar diagnoses. Therefore, there is a clear need for more studies with stronger designs and larger sample sizes.

Conclusions: The study's results highlight the significance of artificial intelligence in preventing patient falls, demonstrating positive economic and social effects.

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Arboviruses and Pregnancy: Visible or Hidden Threat?

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Posters

Keywords:
Pregnancy prevention, Arboviruse, Aedes mosquito

ABSTRACT

Introduction: Arbovirus diseases, which are transmitted by mosquitoes, pose a significant global concern and can have serious consequences for both mothers and their babies. In developing countries, the impact of these viruses on pregnancy—such as the occurrence of congenital abnormalities in affected children—is often overlooked. Additionally, due to the prevalence of these infections, there is a scarcity of scientific data specifically concerning pregnant women, with some regions lacking information entirely. Consequently, this study was conducted to focus on the management and prevention of arbovirus infections in pregnant women.

Materials and Methods: This study used a review method, searching Medline (PubMed), Embase, Scopus, Science Direct, Google Scholar, and Irandoc databases with the keywords "Pregnancy," "Arbovirus," "Aedes Mosquito prevention," and their Persian equivalents. The articles ranged from 2014 to 2024.

Results: This review highlights the significant threat that arboviruses pose to both mothers and their fetuses. Factors such as climate change, urbanization, travel, and migration increase the geographical spread of arboviruses, which can affect not only maternal health but also lead to severe outcomes for fetuses. These outcomes may include fetal loss, birth complications, infant infections, long-term neurological disorders, and vision impairment. It's important to recognize that the true burden of arbovirus infection and the actual incidence of adverse fetal outcomes during pregnancy are often underreported.

Conclusions: The results indicate that special attention must be given to pregnant women and their families when traveling to endemic areas. This virus has a remarkable ability to adapt to new carriers and environments, posing a significant threat to future generations. It can lead to social challenges and the potential loss of an important segment of the country's intellectual capital. Additionally, it places a substantial financial burden on the national healthcare system due to the care required for Children affected by microcephaly. Therefore the most critical action is to identify potential carriers across various regions of the country, followed by appropriate control and sanitation measures.

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Aseptic Methods for Preventing of Catheter-associated Urinary Tract Infection: A Systematic Review

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Posters

Keywords:
Aseptic methods, Preventing, Catheter-associated urinary tract infection (CAUTI), Systematic review

ABSTRACT

Introduction: Urinary tract infections (UTIs) connected with healthcare settings can represent as much as 40% of hospital infections and 23% of ICU infections. Indwelling urinary catheters are linked to the majority of urinary tract infections (UTTIs); patients using urinary catheters account for about 70% of UTI cases (and 95% of UTIs in intensive care units). If urinary catheterisation is necessary, aseptic catheter placement and maintenance are essential to prevent CAUTI.

Materials and Methods: This systematic study was conducted with the intention of preventing catheter-associated urinary tract infections by the use of aseptic procedures. Search Strategy: A comprehensive literature search was conducted across major electronic databases such as PubMed, EMBASE, Scopus, and Cochrane Library. The search strategy combined MeSH terms and relevant keywords to identify relevant studies. MeSH terms included: " aseptic methods", " aseptic", " preventing " Catheter-associated urinary tract infection" and " urinary tract infection." The search was limited to studies published in English. Additional filters were applied based on study design (e.g., randomized controlled trials, observational studies) and within the time frame of 2013-2023. The search results were screened independently by two reviewers based on predefined inclusion and exclusion criteria.

Results: The aseptic technique is essential for qualified healthcare providers when inserting urinary catheters. Prior to insertion, cleaning the meatus is recommended, however, routine antiseptic cleansing does not demonstrate benefits and may increase bacteriuria compared to soap and water. Lubricant jelly, although not requiring antibacterial properties, must be sterile to reduce urethral trauma. Closed urinary catheter systems are standard in the U.S. for their effectiveness in decreasing catheter-associated urinary tract infections (CAUTIs). Urine samples should be taken aseptically from the drainage bag or a port, avoiding system disruption. Bladder irrigation with antimicrobial agents is discouraged, as it can worsen infections, while routine catheter exchanges are unnecessary unless mechanical issues arise. In symptomatic UTI cases, exchanging long-term catheters is beneficial.

Conclusion: Indwelling catheterization requires strict aseptic techniques and a closed collection system to prevent CAUTI. Anti-infective catheters may be necessary for high-risk patients or persistent CAUTI cases.

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Assessment of hand hygiene compliance in the pediatric intensive care unit at Shahid Motahari Educational and Treatment Center in Urmia

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ARTICLEINFO

Posters

Keywords:
Pediatric Intensive care unit, Hand hygiene, Healthcare-associated infections

ABSTRACT

Introduction: Despite having only 5 to 31 percent of hospital beds, the intensive care unit accounts for 21 percent of all healthcare-associated infections. Currently, the best, most effective, and cost-efficient method for preventing hospital infections is hand hygiene. This study was conducted with the aim of measuring the level of hand hygiene compliance in the pediatric intensive care unit at Shahid Motahari Educational and Treatment Center in Urmia in the year 1403.

Materials and Methods: For this cross-sectional descriptive study, the World Health Organization's five moments hand hygiene observation checklist was used. Over the course of a month, hand hygiene practices among staff were observed in 20 sessions in the intensive care unit. The total observations yesterday included 600 positions. Then, the results were analyzed separately for five stages: before contacting the patient, before aseptic procedures, after contact with the patient's bodily fluids, after contact with the patient, and after contact with the patient's environment. The results were analyzed using descriptive statistical tests.

Results: The results showed that the overall compliance with hand hygiene in the pediatric intensive care unit is 36.2%. The level of hand hygiene compliance after contact with a patient's bodily fluids was 64.6%, the highest level of compliance, while the level after contact with the patient's environment was 10%, the lowest level of compliance. Nurses had the highest level of compliance at 41%, while students had the lowest level of compliance at 28%.

Conclusion: The results of the study indicate that the highest level of hand hygiene compliance occurs after contact with a patient's bodily fluids, which may be related to the staff's prioritization of their own health over that of the patients, a heavy workload, dryness and skin irritation caused by frequent washing and the use of alcohol-based solutions, a misconception that wearing gloves eliminates the need for hand hygiene, and a lack of awareness regarding the importance of hand hygiene. In general, considering that healthcare personnel play a crucial role in the health team, appropriate training and the use of combined interventions are essential in enhancing their awareness and improving their performance.

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Association of Hospitalization Sector and Covid-19 Infection in Neonates: A Scoping Review

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Keywords:
Newborn, Infection control, Review, COVID-19

ABSTRACT

Introduction: Newborns may contract the 2019 nCoV infection through close contact with individuals who are infected with the virus or carriers. We summarized the current knowledge on the relation between hospitalization sector and covid-19 infection in neonates.

Materials and Methods: A scope review conducted by searching in databases including PubMed and google scholar. we investigated the studies that were published between 2019 and 2024 and written in English. The ultimate selection consisted 21 articles.

Results: To prevent the spread of COVID-19 in healthcare settings, particularly among newborns, various measures should be implemented. Shared accommodations for healthy mothers should ensure a minimum distance of one meter between beds and suspend visits and companions to avoid crowding. The neonatal sector should be divided into transition, quarantine, and general wards. Social distancing, proper hygiene practices, and frequent cleaning and disinfection of equipment are essential. Newborns with suspected infection should be investigated and tested, and those who are positive should be isolated and monitored for 14 days. Pressure rooms with filtered air should be used for confirmed cases, and a minimum distance of one meter should be maintained between incubators and cribs. Personal items and toys should not be shared among patients. Symptomatic parents or home contacts should not enter the NICU until the transmission period has ended. Healthcare professionals should avoid talking at the bedside and refrain from collective activities. Hospital waste should be collected in double-layered infectious waste bags, treated with chlorine, and disposed of accordingly. Terminal disinfection of patient rooms should be done using atomized hydrogen peroxide or chlorine-containing sprays.

Conclusion: Based on the best our knowledge and present studies, early diagnosis and timely case management is essential to reduce virus transmissibility. This research has helped clarify healthcare and Posters practices aimed at preventing and controlling the spread of COVID-19 among newborns.

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Changes in Internet searches related to cardiovascular disease before and after the COVID-19pandemic In Iran

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ARTICLEINFO

Posters

Keywords:
Cardiovascular, Artificial intelligence, Google trends, big data.

ABSTRACT

Introduction: Cardiovascular disease (CVD) is the most important cause of death in Iran. In addition, the standardized incidence rate in Iran is higher than the world average. The Internet is an important source for accessing health information. Objectives: The aim of this study is to investigate the search trends of keywords related to cardiovascular disease syndromes before and after the COVID-19pandemic. The Internet is an important source for accessing health information and it can be used as an early warning system for epidemics and disease outbreaks.

Materials and Methods: This study is an ecological study based on Google Trends (GTs). We first searched for users' specified search terms related to “chest pain”, “heart attack”, ‘heart diseases”,” hypertension”, and “COVID-19” from January 2015 to January 2024. Spearman's correlation analysis was used to investigate the relationship between RSV and different symptom terms. All statistical analyses were performed with R software4, and P0.05 was considered statistically significant.

Results: Simultaneously with the covid-19 pandemic, the search rate for the keywords of chest pain and cardiovascular diseases has increased compared to before and after the COVID-19pandemic. But there was no change in the keywords of blood pressure and heart attack. There was a positive and significant correlation between the search of keywords covid-19 and chest pain(R2=0.82, P=0.0001(, But there was an inverse and significant correlation with blood pressure(R2=-0.41, P=0.0001(and cardiovascular diseases(R2=-.55, P=0.0001(.

Conclusion: Google Trends can be a tool to determine the behavioral pattern of people towards cardiovascular diseases and its syndromes. Keywords: cardiovascular, Artificial Intelligence, Google trends, Big Data.

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Characterization of Genes Involved in The Iron Acquisition System of M, ultidrug-Resistant Acinetobacter Baumannii

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ARTICLEINFO

Posters

Keywords:
Acinetobacter baumanni, Iron acquisition, Pathogenesis, Genes

ABSTRACT

Introduction: This study focuses on identifying the BauA and BasD genes in *Acinetobacter baumannii* isolates primarily collected from Intensive Care Units (ICUs). The main goal is to design PCR primers for the simultaneous identification of these genes, with specific sequences provided. The research indicates that infections caused by *A. baumannii* are particularly common among patients with invasive catheters and in blood samples. Identification of *A. baumannii* was confirmed through PCR targeting the Oxa-51 gene, revealing that 82% of multidrug-resistant (MDR) strains possess both the BauA and BasD genes. The study highlights the critical role of iron acquisition in the pathogenesis of *A. baumannii*, emphasizing that iron uptake is essential for the bacterium's survival and infection within the host. It suggests the necessity for further exploration of iron acquisition mechanisms and their implications for treating A. baumannii infections, advocating for more research in this area to develop effective treatments.

Materials and Methods: The analysis involved 50 MDR *A. baumannii* strains collected from various hospital units in Iran, including ICUs, surgical departments, and neonatal intensive care units (NICUs). Infections were linked to various sources such as blood, urine, and wounds. Confirmation of *A. baumannii* was achieved by amplifying the Oxa-51 gene using specific primers. Identification of the target genes was performed through conventional PCR under established experimental conditions.

Results: The findings underscore a high prevalence of the BauA and BasD genes in clinical isolates of A. baumannii, highlighting the urgent need for improved surveillance and infection control measures to curb the spread of MDR strains. The regional variation in gene frequencies suggests that tailored intervention strategies are necessary based on specific resistance mechanisms found in different healthcare settings.

Conclusion: Further research is essential to explore the clinical implications of these findings and to develop effective strategies to address *A. baumannii* antibiotic resistance.

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Comparative Impact of Alcohol-Based Hand Rubs and Antimicrobial Soap Handwashing on Skin Health, Occupational Dermatitis, and Compliance with Hand Hygiene Protocols among Surgical Staff: Enhancing Infection Control Strategies in Clinical Settings

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ARTICLEINFO

Posters

Keywords:
Alcohol-based hand rubs, Antimicrobial soap, Dermatitis, Surgical staff

ABSTRACT

Introduction: Hand hygiene is a fundamental element in infection control strategies, particularly in surgical settings where healthcare-associated infections (HAIs) are common. However, adherence to hand hygiene protocols is often influenced by the method used, which can also affect skin health and occupational dermatitis among healthcare workers. Alcohol-based hand rubs (ABHRs) and antimicrobial soap handwashing are two widely recommended techniques, but their comparative effects on skin integrity, dermatitis prevalence, and compliance remain unclear. This systematic review and meta-analysis aim to evaluate the comparative impact of ABHRs versus antimicrobial soap handwashing on skin health, occupational dermatitis, and hand hygiene compliance among surgical staff to improve infection control practices.

Materials and Methods: A systematic search was conducted in PubMed, Cochrane Library, Web of Science, and Embase databases for studies published between 2000 and 2023. Keywords included "hand hygiene," "alcohol-based hand rubs," "antimicrobial soap," "surgical staff," "dermatitis," and "compliance." The included studies were randomized controlled trials (RCTs) and observational studies evaluating skin health, occupational dermatitis, and hand hygiene compliance among surgical staff. The risk of bias was assessed using the Cochrane Risk of Bias tool, and a random-effects model was used for data synthesis. Inclusion criteria included studies involving surgical staff, hand hygiene interventions (ABHRs or antimicrobial soap), and outcomes related to skin health and compliance. Studies not focused on surgical staff or lacking relevant outcomes were excluded.

Results: A total of 32 studies with 4,560 participants were included. ABHRs were associated with a significantly lower incidence of occupational dermatitis (RR: 0.65, 95% CI: 0.52–0.79, p 0.001) compared to antimicrobial soap. Compliance with hand hygiene protocols was higher with ABHR use (RR: 1.34, 95% CI: 1.18–1.51, p = 0.002). Skin health outcomes, including moisture levels and irritation scores, were significantly better in the ABHR group.

Conclusion: This meta-analysis demonstrates that ABHRs are more effective than antimicrobial soap handwashing in maintaining skin health, reducing occupational dermatitis, and improving compliance with hand hygiene protocols among surgical staff. These findings suggest that promoting ABHRs in clinical settings could improve hand hygiene practices and reduce HAIs while minimizing skin-related issues for healthcare workers.

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Comparing the Reporting Rate of Hospital Errors by Two Systemic Methods and Active Reporting in Shahidan Mobini Sabzevar Educational and Therapeutic Hospital

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ARTICLEINFO

Posters

Keywords:
Hospital error report, Posters reporting, Iran

ABSTRACT

Introduction: Medical error reporting is one of the most important strategic indicators to reduce Posters errors in health care systems. In addition to reducing physical and mental injuries, error reporting reduces patient costs reduces hospital and government costs, and also prevents similar errors from occurring in the future. It is necessary to use an efficient reporting system to record errors electronically in addition to paper, but it is not enough. Considering the obstacles of reporting medical errors and the low reporting of errors, the present research was conducted in order to compare error reporting through the collection of documents recorded by personnel in the first 6 months of 2023 with active reporting of employees (interviews with personnel) by the presence of an expert from the hospital's quality improvement unit and in the first 6 months of 2024.

Materials and Methods: This study was a descriptive-analytical study that was conducted on 236 employees who were randomly present in the shift (nurses and midwives, doctors and paraclinical personnel) working in a educational and therapeutic hospital under Sabzevar University of Medical Sciences. A valid and reliable questionnaire including the department's characteristics and demographic characteristics and interviews with the personnel and asking questions according to the hospital's error report checklist was conducted by the expert of the quality improvement unit.

Results: The number of systemic errors reported in the first 6 months of 2023 was 34, while the reported error was 58 in the first 6 months of 2024. Which has increased by 70%. 70% of all reported errors were related to the Posters group. In active reporting of errors from personnel, medication error reporting(160%), systemic errors(140%), errors in physician and nurse attention and treatment(55%), errors related to the identification process(50%), and errors related to the diagnosis process(28.5%) has increased.

Conclusion: Considering the high workload of personnel and not having enough time to record and document hospital errors, the presence of safety experts in clinical units and direct interviews with personnel can be effective in identifying and preventing similar errors.

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Comparison of Antiseptic Solutions Used in the Operating Room: A Review Study

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ARTICLEINFO

Posters

Keywords:
Solution, Disinfection, Operating room

ABSTRACT

Introduction: In operating room environments, effective disinfection of equipment and surfaces is critical to prevent surgical-related infections. Considering the variety of available disinfectant solutions, this study investigates and compares the efficiency, safety and different characteristics of these solutions.

Materials and Methods: The present study was conducted as a systematic review of articles published in reliable databases such as PubMed, Scopus and Google Scholar from 2000 to 2023. The selection criteria included the quality of the study, the type of disinfectant solution and its effect on reducing the microbial load. Data were analyzed using statistical software.

Results: The results showed that chlorine and alcohol base solutions (especially 70% ethyl alcohol) are the most effective in reducing bacteria. Also, iodophor-based solutions were used for surface disinfection due to their clarifying property and long lasting effect. However, some solutions have side effects such as tissue irritation that should be considered in their selection.

Conclusion: Choosing the right disinfectant solution in the operating room can have a significant impact on the success of surgery and reducing post-operative infections. It is suggested that medical centers choose disinfectant solutions based on documented protocols and scientific evidence and create regular training courses for personnel to prevent infections caused by surgery.

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Comparison of Effect Herbal Mouthwash with Chlorhexidine Mouthwash on Oral Health and Prevention of Ventilator-Associated Pneumonia: A Narrative Review

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Posters

Keywords:
Ventilator associated pneumonia (VAP), Herbal, Chlorhexidine, Mouthwash, Oral health

ABSTRACT

Introduction: Inadequate oral care in mechanically ventilated patients facilitates the accumulation of pathogenic bacteria in the oropharynx. These bacteria can migrate via the endotracheal tube to the lower respiratory tract, leading to ventilator-associated pneumonia (VAP). Although various interventions are employed to enhance oral health in these patients, their effectiveness remains inconsistent and subject to debate. Chlorhexidine is the most widely used antiseptic and the current gold standard for oral care in this context. However, its use is associated with adverse effects such as dry mouth, altered taste perception, an unpleasant aftertaste, and the disruption of normal oral flora. In response, herbal mouthwashes have gained attention as potential alternatives for improving oral hygiene and preventing pneumonia, particularly in mechanically ventilated patients.

Materials and Methods: This study was a narrative review that was performed during 2015-2024 through searching electronic databases (Pubmed, Science Direct, Google Scholar, and Scopus) with the keywords Ventilator Associated Pneumonia (VAP), Herbal, Chlorhexidine, Mouthwash, and Oral health.

Results: Of the 60 articles initially identified, 20 studies met the inclusion criteria for this review. All included studies were either randomized clinical trials or descriptive and prospective studies. The results suggest that routine oral care practices, including suctioning secretions, tooth brushing, and foam rinsing, contribute to improved oral hygiene. Additionally, as interest in complementary medicine continues to grow, herbal mouthwashes have emerged as promising alternatives to chlorhexidine, offering similar benefits with fewer side effects. Specifically, herbal mouthwashes containing hydroalcoholic extracts of Cyperus rotundus, Thymus vulgaris (thyme), Orthodontol mouthwash, peppermint, and basil demonstrated positive outcomes in maintaining oral health and preventing VAP.

Conclusion: Oral hygiene is a fundamental aspect of Posters care in intensive care units. Nurses and caregivers can use herbal mouthwashes to enhance patients' oral health and reduce the incidence of ventilator-associated pneumonia. Further research through large-scale clinical trials is recommended to establish definitive guidelines for the use of herbal mouthwashes in critical care settings. Key words: Ventilator Associated Pneumonia (VAP), Herbal, Chlorhexidine, Mouthwash, Oral health

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Controlling The Spread of Antibiotic Resistance through the Analysis of Microbiology Laboratory Data over a Three-month Period at Al-Zahra Educational and Therapeutic Center in Isfahan

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ARTICLEINFO

Posters

Keywords:
Control of antibiotic resistance spread, Microbiology laboratory, Al-Zahra Educational and Therapeutic Center, Antibiotic resistance

ABSTRACT

Introduction: Antimicrobial resistance (AMR) is a significant global health threat, complicating the treatment of infectious diseases.
Materials and Methods: This retrospective study analyzed microbiology laboratory data collected over a three-month period at Al-Zahra Educational and Therapeutic Center in Isfahan to characterize antibiotic resistance patterns among clinical isolates. The data included clinical specimens and susceptibility testing results.The study focused on Gram-negative bacteria, including *Acinetobacter*, *Escherichia coli*, *Enterobacter*, *Klebsiella*, and *Pseudomonas aeruginosa*, and their resistance to a panel of antibiotics such as tazobactam, amikacin, ceftazidime, ciprofloxacin, co-trimoxazole, meropenem, imipenem, cefepime, and levofloxacin.
Results: An alarming 80% increase in overall resistance rates was revealed during the first month of the study, rising from 115 to 207 cases. Notably, resistance rates among key pathogens like *Klebsiella* and *Acinetobacter* increased significantly. These findings underscore the urgent need for enhanced infection control measures and antimicrobial stewardship programs.Subsequent to these findings, the institution implemented corrective actions, leading to a 9% decrease in overall Gram-negative bacterial resistance rates in the following month.
Conclusion: This demonstrates the effectiveness of targeted interventions in mitigating AMR.

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Crucial Nurses' Role in Infection Prevention and Control: A Narrative Literature Review

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ARTICLEINFO

Posters

Keywords:
Posters role, Infection prevention, Infection control

ABSTRACT

Introduction: Nurses play a vital role in infection prevention and control (IPC) across healthcare settings, a responsibility that was especially emphasized during the COVID-19 pandemic. Their duties include implementing standard precautions, conducting risk assessments, and managing infection outbreaks to prevent transmission. In addition to the use of personal protective equipment (PPE) and antibiotic stewardship, nurses are involved in surveillance, monitoring infection rates, and taking measures to control potential outbreaks. Infection Prevention and Control Nurses (IPCNs) further serve as clinical practitioners, coordinators, and educators, with specific roles in emergency departments and high-risk procedures such as urinary catheter insertion. Additionally, nurses contribute to patient safety by educating patients and families on IPC measures. However, they often face challenges related to limited infrastructure, professional support, and role ambiguity. This study aims to explore the multifaceted roles of nurses in IPC, focusing on their contributions to infection prevention practices, surveillance, and education.

Materials and Methods: A narrative literature review was conducted; the keywords included Infection Prevention and Control (IPC) and nurses' role in IPC. The title and abstract of articles from 2017 to 2024 that were published in PubMed, Web of Science, and Scopus databases were searched. The full text of the published articles was reviewed and based on quality check evaluation & scoring by two authors finally 16 articles were selected.

Results: Findings show that nurses are integral to maintaining IPC standards, notably in emergency care, surveillance, and antibiotic stewardship. IPCNs, serving as practitioners, coordinators, and educators, play a critical role, though they face barriers such as limited infrastructure and support. Continuous education and training are essential in enhancing nurses' IPC knowledge and practices, while attitudes and self-efficacy also significantly impact adherence to infection control practices. Nurses also contribute to patient safety through direct education of patients and families on infection prevention.

Conclusion: Nurses are integral to the success of IPC measures, adapting to new infectious disease threats and maintaining high standards in patient safety. Addressing the barriers nurses face such as infrastructure limitations and role ambiguity while increasing support for training and development can further empower their vital role.

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Designing Comprehensive Protocols for The Management of Patient Care-associated Infections

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ARTICLEINFO

Posters

Keywords:
comprehensive protocols, management of infections, patient care-associated infections

ABSTRACT

Introduction: In today's healthcare landscape, the management of patient care-associated infections (PCAIs) is increasingly critical for ensuring patient safety and enhancing clinical outcomes. PCAIs have significant risks not only to individual patients but also to healthcare systems as a whole, leading to extended hospital stays, increased healthcare costs, and, in some cases, patient morbidity and mortality. This article explores the importance of designing thorough protocols for managing PCAIs, to improve patient care across various healthcare settings.

Methods and Materials: To find articles related to the topic, search in Persian and English databases such as PUBMED, SCOPUS, SID and GOOGLE SCHOLAR using the keywords from 2018 to 2024 was conducted Results: The development of comprehensive protocols for the management of patient care-associated infections (PCAIs) involve a multi-phase approach, yielding significant insights and outcomes.In development of these protocols a multidisciplinary team, including infection control specialists, physicians, nurses, and pharmacists are collaborating to aimed at preventing and managing PCAIs. The research on designing comprehensive protocols for the management of patient care-associated infections (PCAIs) yielded several critical findings that highlight the effectiveness of structured approaches in preventing and controlling these infections.

Results: 1. Infection Rate Reduction:30% reduction in hospital-acquired infections over a six-month period.Surgical site infections decreased by 25%, and catheter-associated urinary tract infections dropped by 40%. 2. Compliance Improvement: pre- and post-implementation surveys showed significant improvement in compliance with infection control practices such as hand hygiene (Increased from 58% to 82%) 3. Impact on Antibiotic Prescribing: the introduction of antibiotic stewardship guidelines led to reduction in Broad-Spectrum Antibiotics. 4. Patient Outcomes and Satisfaction: improvements in patient care were evidenced by reduce of length of Stay and increase of patient Satisfaction Scores.

Conclusion: The research underscores the importance of comprehensive protocols in effectively managing PCAIs. The significant reduction in infection rates, improved compliance, and enhanced patient outcomes demonstrate the protocols' critical role in fostering a safer healthcare environment

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Effect of Probiotics for Infectious Problems in Cancer Patients: A Systematic Review

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ARTICLEINFO

Posters

Keywords:
Cancer, Neoplasms, Infection, Probiotic

ABSTRACT

Introduction: Immunosuppression is one of the most dangerous complications of cancer treatments, leading to increased susceptibility to infections that can diminish patients' chances of recovery and survival. The use of probiotics as a natural solution improves microbial balance and enhances immune response, which may help reduce infectious complications in these patients. This study aims to examine the effect of probiotics on infectious problems in cancer patients.

Materials and Methods: This study was conducted according to the PRISMA 2020 guidelines. Initial search using the keywords "probiotic", "cancer", "neoplasms", and "infection" in the databases PubMed, Magiran, and the Google Scholar search engine yielded 83 articles. Inclusion criteria involved clinical trials focused on controlling infections in cancer patients using probiotics, published from 2014 to 2024, while exclusion criteria included any deviation from these parameters. After eliminating duplicates and irrelevant studies, 7 articles were analyzed.

Results: The review conducted three studies showing the impact of probiotic use in reducing postoperative infections, and inflammatory indicators, and improving short-term clinical outcomes in colorectal and gastric cancer. While one study comparing probiotics with antibiotics as prophylaxis for postoperative infections, suggested the use of antibiotics. Another study demonstrated a reduction in oral candidiasis in patients undergoing head and neck radiotherapy with probiotics, whereas a different study in the same patient group did not report a significant effect on the oral microbiota. One study showed a reduction in urinary tract infections (UTIs) after cystoscopy with the use of probiotics in patients with bladder cancer.

Conclusion: Despite varying results, it appears that the use of probiotics may serve as an effective method for reducing infectious complications in surgical site, urinary tract and mouth arising from cancer treatments. Future studies should specifically focus on the type and dosage of probiotics, infectious agents, and the safety of these approaches.

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Effective Immunization and Posters Care related to Nosocomial Infections Caused by Arterial Catheters: A Systematic Review

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ARTICLEINFO

Posters

Keywords:
Infection, Posters care, Arterial line

ABSTRACT

Introduction: Indwelling arterial catheters (ACs) are used frequently for continuous hemodynamic and respiratory monitoring perioperatively and in critical illness. Despite their ubiquity, there are certain risks and complications such as infection. Nurses play an important role in reducing complications caused by arterial catheter by using Posters interventions .the aim of this research is to optimize and effectively secure these catheters in order to improve safety and reduce infections caused by them, which should be on the agenda.

Materials and Methods: This systematic review adhered to PRISMA guidelines. A comprehensive search was conducted in PubMed, Web of Science, SID, Scopus for articles published between 2000 and 2024. Inclusion criteria included studies on arterial catheter infections and their impact on patients. Exclusion criteria involved any deviations from these parameters, using unsuitable study types or publication outside the specified period. The initial search yielded 40 articles, of which 8 met the inclusion criteria. These selected studies were analyzed to evaluate the effectiveness of Posters care on the control and prevention of arterial catheter infection.

Results: The findings of studies reported the effectiveness of chlorhexidine dressings and polyurethane dressings in preventing infection. In one study, the use of Statlock performance monitoring device was recommended for infection control and catheter fixation. Also thorough sterile precautions during catheter insertion were also considered. Research has shown that the use of BCS significantly reduces the microbial contamination of intraluminal fluid compared to 3-way stop valve catheterization. Overall, these findings support the impact of Posters care on effective immunization and reduction of arterial catheter-related infections.

Conclusion: Posters interventions have been shown as an effective strategy in reducing the infection caused by arterial catheter among patients. By improving Posters interventions, it is possible to witness the reduction of complications caused by arterial catheterization To optimize their lasting benefits, future research should examine long-term interventions and use new Posters methods.

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Effective Measures for the Prevention and Control of Infection after Emergency Cesarean Section: A Systematic Review

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ARTICLEINFO

Posters

Keywords:
Emergency cesarean section, Infection prevention, Infection control, Postoperative care

ABSTRACT

Introduction: Postoperative infections are among the most common complications associated with emergency cesarean sections, posing serious health risks to mothers. This review aims to examine effective measures for preventing and controlling postoperative infections following emergency cesarean sections, as discussed in scientific articles published between 2019 and 2024.

Materials and Methods: A systematic search was conducted in databases including Scopus, PubMed, Google Scholar, and SID using keywords such as "emergency cesarean section," "infection prevention," "infection control," and "postoperative care." Relevant articles published between 2019 and 2024 were reviewed and 18 studies meeting the inclusion criteria were selected for this systematic review.

Results: Findings indicate that the use of prophylactic antibiotics, adherence to sterilization protocols in the operating room, consistent postoperative care, and managing risk factors (such as diabetes and obesity) are key actions for reducing infections after emergency cesarean sections. Studies showed that antibiotic prophylaxis administered before surgical incision significantly reduces surgical site infections. Additionally, educating patients on postoperative care effectively reduces infection rates.

Conclusion: The results of this study suggest that adherence to standard protocols and implementation of preventive care measures substantially decrease infections following emergency cesarean sections, thereby enhancing patient safety. It is recommended that these practices be more widely and systematically adopted in healthcare facilities.

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Effectiveness of 3-step Hand Hygiene Technique: A Review Study

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ARTICLEINFO

Posters

Keywords:
Hand hygiene, 3-step h technique, Infection control

ABSTRACT

Introduction: Hand hygiene is the most important intervention to reduce the risk of infection transmission. Despite multiple interventions to increase compliance with hand hygiene, adherence to this principle remains insufficient in most institutions. The handwashing technique presented in the World Health Organization (WHO) guidelines consists of 6 steps. An alternative technique introduced is a 3-step process. This review study aimed to compare the practical effects of the six-step and three-step techniques.

Materials and Methods: In this review article, research related to handwashing techniques was examined. The databases PubMed, Scopus, and CINAHL were selected for the literature review. The search strategy included terms such as "hand hygiene," "six-step technique," "three-step technique," and "infection control," covering articles from 2014 to 2024 and limited to English-language RCTs. A total of 40 articles were retrieved, and after evaluating the inclusion criteria, 6 articles were selected for review.

Results: Indicators such as hand hygiene compliance rate, accuracy, hand hygiene execution time, and colony clearance rate were evaluated. One of the main reasons for poor hand hygiene compliance is the time factor. The 3-step technique, by reducing the time required, may lead to improved hand hygiene compliance. Studies showed that the compliance rate with the three-step technique was higher than the six-step technique, and there was no statistically significant difference in the reduction of microorganisms between the two techniques. Moreover, the three-step technique is easier to remember and has greater generalizability.

Conclusion: Based on the available evidence, the traditional six-step technique can be safely replaced with the three-step technique. This simpler, proposed method can facilitate improved adherence to hand hygiene practices.

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Effectiveness of Cover Catheter in Preventing Blood Infection in Hospitalized Patients

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ARTICLEINFO

Posters

Keywords:
Catheter cover, Central venous catheter, Acute kidney failure, Blood infection

ABSTRACT

Introduction: Central venous catheters are used for patients who need dialysis. Nevertheless, its complications, especially blood infection/sepsis, are the most common cause that appear after symptoms such as fever and chills. This issue needs further investigation and clinical care under sterile conditions from the time of catheter insertion to dialysis and dressing. According to a study conducted in Imam Reza Hospital in 1988-1990 with 65 patients, the mean hospitalization time changed from 2.5 days to 7.5 days. Also, the death rate increases, and the cost of treating the disease increases.

Materials and Methods: Ordinary gaze and glue were used for dressing the dialysis catheter of patients, which was replaced with a simple designed cover. This catheter is changed every 48 hours and prevents any use unrelated to dialysis. This study was conducted during the second half of the year 1402.

Results: The rate of blood infection decreased according to statistics, from 5 episodes per 1000 vascular catheter days in the first half of 1402 to 3.5 episodes per 1000 catheter days in the second half of 1402. Patients were more satisfied with the catheter cover method in terms of appearance and effectiveness compared to the routine method. Also, due to the prevention of infection, this method can reduce the length of hospitalization in these patients and reduce the cost of treatment in acute kidney patients, which needs more research.

Conclusion: Covering the dialysis catheter to prevent contact with other environmental contamination, contact with the patient's hair and skin, and avoiding using the Shaldon catheter for non-dialysis cases effectively reduces infection.

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Effectiveness of Hand Hygiene Agents to Prevention of Infections in Neonates

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ARTICLEINFO

Posters

Keywords:
Hand hygiene, Prevention, Infections, Neonate

ABSTRACT

Introduction: Every year, about 500,000 neonates die as a result of an infection caused by bacteria (approximately 25% of the 2.8 million neonatal deaths worldwide). Most of these deaths occur in low- and middle- income countries. Frequent and good hand hygiene by mothers, caregivers and healthcare workers may reduce infections of the neonates by reducing dirt, and germs on their hands, thereby reducing their ability to infect neonates. The aim of the review was to determine the effectiveness of different hand hygiene agents for preventing neonatal infection.

Materials and Methods: We searched for relevant studies that compared the benefits of any form of hand hygiene agents. We searched in Cochrane and CINAHL for relevant studies up to October 2024.

Results: According to the results of a systematic review, two percent chlorhexidine gluconate probably reduces the risk of bacteriologically confirmed infections in neonates compared to alcohol hand sanitiser within the first 28 days of life. Also, there is uncertainty about which hand hygiene agents is best for preventing infection in neonates.

Conclusion: Antiseptic soaps, chlorhexidine, and alcohol hand sanitisers continue to be recommended for use during patient care in hospital settings.

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Effects of Nocospray Disinfection Device on the Reduction of Children's Hospital Acquired Infections

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ARTICLEINFO

Posters

Keywords:
Disinfection, Hospital acquired infection, Nocospray

ABSTRACT

Introduction: Contamination of medical equipment and environmental surfaces with microorganisms plays a significant role in the transmission and spread of hospital infections. Considering the deaths and costs caused by hospital infections, it is necessary to take appropriate measures to prevent the spread of infection, such as cleaning and disinfection. The purpose of this study was determining the status of hospital infections before and after using the air and surface disinfectant device known as nocospray which applies dry mist technology and hydrogen peroxide solution.

Materials and Methods: This cross-sectional study was conducted in two 6-month periods at Dr. Sheikh Children's Hospital, in Mashhad, between 2021 and 2022. All patients who were hospitalized for more than 48 hours and had a hospital infection were included in the study. In the second 6 months, a Nocospray disinfection device was used to disinfect surfaces and equipment. Nosocomial infection was determined according to clinical symptoms and blood, urine and tracheal tube cultures in both 6- month periods and the results of the two periods were compared.

Results: A total of 198 cases of nosocomial infections were observed, 121 cases (61%) of which were related to the first 6 months. The death rate in the second 6 months decreased by 1.65% compared to the first 6 months. Among children of different ages, the age range of 1 to 4 years accounted for the highest number of hospital infections. And the highest rate of infection was related to the intensive care unit.

Conclusion: This study showed the positive effect of surface and air disinfection devices (Nocospray) in reducing the incidence of hospital infections and mortality.

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Evaluation of Compliance of Prophylactic Antibiotics in Comparison with National Guidelines in Selected Hospital of Mashhad

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ARTICLEINFO

Posters

Keywords:
Surgical prophylaxis, Guidelines, Prophylactic antibiotics, Infection

ABSTRACT

Introduction: Surgical site infection is one of the major causes of increased morbidity and mortality as well as imposed a high cost on the health care system which can be reduced by appropriate antibiotic prophylactic use. The aim of our study was to evaluate the compatibility of prophylactic antibiotic use in surgical patients with national guidelines.

Materials and Methods: The use of prophylactic antibiotics in the groups of surgery were investigated from March to September 2024 and compared to six months earlier in the selected hospital of Mashhad. The data analyzed by EXCEL software.

Results: The compliance of prophylactic antibiotics with national guidelines in a total of 3452 cases was 82.11%, which it was 78.95% in the previous six months. The highest and lowest compliance with national guidelines was reported in the Gynecology and obstetrics surgery group with 95.75% and in the neurosurgery group with 62.75% respectively.

Conclusion: Due to the importance of appropriate antibiotic prophylactic use in reducing postoperative complications and infections, Educational interventions are recommended. It is also suggested to more supervision be given to the prophylactic antibiotic prescription and the necessary feedback be given in case of non-compliance.

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Evaluation of the Awareness of the Bundled Care in Prevention of the Catheter-Associated Urinary Tract Infections (CAUTI) among ICU Nurses Working in Clinical Centers of Guilan University of Medical Sciences in 2023

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ARTICLEINFO

Posters

Keywords:
Bundled Care, Catheter-associated urinary tract infection (CAUTI), Nurses

ABSTRACT

Introduction: Catheter-associated Urinary Tract Infection (CAUTI) is the most common HAI, accounting for 40% of all nosocomial infections and the second most common cause of nosocomial septicemia.65-70% of CAUTIs are preventable and nurses play a significant role in its prevention. The aim of the present study was evaluating the knowledge of ICU nurses in medical centers affiliated to Guilan University of Medical Sciences regarding bundled care in preventing CAUTI.

Materials and Methods: A descriptive-cross-sectional study was conducted in medical centers affiliated to GUMS in 2023. The tool of the current study was a researcher-made questionnaire derived from the studies conducted regarding bundled care in the prevention of Catheter-associated Urinary Tract Infection, which was provided to the nurses through the link. The research population consisted of all nurses working in the ICUs of 25 medical centers , who had at least six months of work experience and were willing to participate in the study (N=803). For analyzing the data SPSS Ver17 software and independent t-test and Pearson and Spearman correlation coefficient were used.

Results: Out of a total of 434 nurses participating in the study, 86.6% were female with an average age of 35.4 ± 7.4. 42.4% of nurses working in ICUs rated their overall performance in terms of compliance with the principles of bundled care in preventing and controlling infection caused by urinary catheter as favorable, 52.8% as relatively favorable, 3.9% as relatively unfavorable, and 0.9% as unfavorable. The results of the present study showed that 75.5% of the participants answered "correct", 21.65% answered "wrong" and 2.85% answered "I don't know" to the questions. Therefore, the level of the knowledge of ICU nurses was evaluated as desirable. Also, the lowest level of awareness was reported regarding to the care of urine bag (11.8%) and perineal care (23.3%). There was no significant relationship between age, gender, type of public or private center and work experience with the level of awareness (p0.001).

Conclusion: Using the principles of Bundled Care and considering standard checklists to measure the level of compliance with these principles as targeted educational efforts are low-cost and high-efficiency solutions that may reduce CAUTI in intensive care units.

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Evaluation of the Effectiveness of Different Infection Control Strategies in Healthcare Settings: A Systematic Review

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ARTICLEINFO

Posters

Keywords:
Infection control, Healthcare-associated infections, Hand hygiene, PPE, Antimicrobial stewardship, Environmental cleaning

ABSTRACT

Introduction: Healthcare-associated infections (HAIs) pose a significant risk to patient safety, leading to increased morbidity, mortality, and healthcare costs worldwide. Effective infection control strategies, including hand hygiene, personal protective equipment (PPE), environmental cleaning, and antimicrobial stewardship, are critical in mitigating the spread of infectious diseases in healthcare settings. Despite the widespread implementation of these interventions, their effectiveness varies across regions and healthcare systems. This systematic review evaluates and compares the effectiveness of different infection control strategies, .focusing on evidence from recent studies between 2018 and 2024

Materials and Methods: Following PRISMA guidelines, a comprehensive search of PubMed, Scopus, Google Scholar, and ResearchGate was conducted. Search terms included "infection control," "healthcare-associated infections," "hand hygiene," "PPE," "antimicrobial stewardship," and "environmental cleaning." Of the 2,500 articles initially identified, 50 studies met the inclusion criteria, which required peer-reviewed articles published in English and reporting measurable outcomes in healthcare settings. Data were extracted on study design, interventions, outcomes, and limitations.

Results: Hand hygiene and PPE were the most effective interventions, significantly reducing HAIs. Hand hygiene compliance reduced infection rates by up to 50%, while adherence to PPE protocols reduced transmission by 40%. Environmental cleaning, especially in high-risk areas like intensive care units (ICUs), reduced infections by 35%, and antimicrobial stewardship programs decreased multidrug-resistant organisms (MDROs) by 20%. However, success was often dependent on staff compliance, resource availability, and institutional support.

Conclusion: This review emphasizes the importance of infection control strategies, particularly hand hygiene and PPE, in reducing HAIs. Environmental cleaning and antimicrobial stewardship also play critical roles, though their success hinges on overcoming challenges like inconsistent compliance and limited resources. Healthcare facilities must invest in training, provide sufficient resources, and foster a culture of safety to enhance the effectiveness of infection control programs and improve patient outcomes. Future research should focus on addressing these barriers to optimize infection prevention efforts.

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Evidence-based Posters Practice and Improving Patient Care Outcomes in the Prevention of Infection Transmission: A Systematic Review

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ARTICLEINFO

Posters

Keywords:
Evidence-based Posters practice, Improving patient care outcomes, Prevention, Infection transmission, Systematic review

ABSTRACT

Introduction: Evidence-based Posters practice (EBNP) has emerged as a cornerstone of modern healthcare, emphasizing the integration of the best available research evidence, clinical expertise, and patient preferences to guide decision-making. In the context of infection prevention and control (IPC), EBNP plays a pivotal role in mitigating the risk of healthcare-associated infections (HAIs) and enhancing patient outcomes. By systematically incorporating evidence into clinical practice, nurses can implement effective interventions to prevent the transmission of pathogens, reduce the burden of illness, and improve patient safety. This review article comprehensively examines the role of evidence-based Posters practice in mitigating the transmission of infections and enhancing patient outcomes.

Materials and Methods: A comprehensive literature search was conducted across major electronic databases such as PubMed, EMBASE, Scopus, and Cochrane Library. The search strategy combined MeSH terms and relevant keywords to identify relevant studies. MeSH terms included: “Evidence-based Posters practice” “improving patient care outcomes ", " prevention" and "infection transmission". The search was limited to studies published in English. Additional filters were applied based on study design (e.g., randomized controlled trials, observational studies) and within the time frame of 2013-2023. The search results were screened independently by two reviewers based on predefined inclusion and exclusion criteria.

Results: Adherence to evidence-based practices significantly reduces the incidence of healthcare-associated infections (HAIs), such as pneumonia, urinary tract infections, and surgical site infections. Effective hand hygiene practices are paramount in preventing the spread of pathogens, emphasizing the need for consistent adherence to recommended techniques. Isolation precautions are crucial for managing patients with infectious diseases, ensuring appropriate isolation measures and personal protective equipment (PPE) usage. Environmental disinfection plays a vital role in eliminating pathogens from the healthcare environment, requiring regular cleaning and disinfection of surfaces and equipment. Education and training of healthcare professionals are essential for promoting understanding and adoption of evidence-based practices, fostering a culture of infection prevention.

Conclusion: In summary, evidence-based Posters practice is essential for protecting patient health, preventing infections, and ensuring safer healthcare environments, ultimately enhancing patient outcomes through adherence to guidelines.

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Examination of the Adherence to Aseptic Techniques in Motahari Educational Treatment Center in Urmia 1403

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ARTICLEINFO

Posters

Keywords:
Aseptic technique,
Infection control,
Compliance

ABSTRACT

Introduction: The aseptic technique is a set of actions performed under highly controlled conditions aimed at reducing contamination by pathogens. Failure to adhere to these principles can lead to healthcare-associated infections. This study was conducted with the aim of examining the level of adherence to aseptic technique at the Motahari Educational and Treatment Center in Urmia in the year 1403.

Materials and Methods: This descriptive cross-sectional study was conducted in all pediatric departments of Shahid Motahari Educational and Treatment Center in Urmia in the year 1403. To collect data, an observer checklist created by the researcher was used, based on infection prevention and control standards, which was designed according to the type of procedure and professional group. The data were then analyzed using SPSS VER 16 software.

Results: The results showed that the adherence to aseptic technique in the pediatric sections is 73.8%. The level of compliance in special sections is 73.6%, in the operating room is 76.6%, and in regular sections is 63.8%. Among professional groups, operating room specialists and nurses had the highest compliance rates at 87.7% and 70%, respectively, while service staff had the lowest compliance rate at 33.3%. Among the observed procedures, surgeries had the highest compliance rate at 95.7%, while the procedure for suctioning lung secretions had the lowest compliance rate at 65.2%.

Conclusion: Adhering to aseptic technique is a challenging process and affects all aspects of patient care. A lack of knowledge or weakness in understanding infection control guidelines can reduce the level of adherence to aseptic technique. To overcome existing obstacles, it is essential to develop and implement appropriate guidelines, as well as to train and supervise the performance of employees

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Examining the Level of Compliance with Infection Prevention and Control Standards for Patient Safety at Shahid Rajaei, Educational & Medical Center

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ARTICLEINFO

Posters

Keywords:
IPC, Standards, Infection prevention and control, Patient safety

ABSTRACT

Introduction: Infection prevention and control programs at the national and hospital levels with the aim of implementing infection prevention and control at the hospital level and providing care in a safe and efficient way for patients and maintaining the safety of employees and the environment by using evaluation tools in order to help planning. Its optimal organization and implementation has been planned.This evaluation tool should be used in order to know the points that can be improved, to plan goals and a road map for the implementation, strengthening, control and monitoring of the implementation of infection prevention and control programs.

Materials and Methods: The current study is a cross-sectional descriptive study that was conducted in the first quarter of 2013 at the Shahid Rajaei Medical Training Center based on the findings and information extracted from the infection prevention and control program evaluation tool,including the organization of the infection prevention and control program, technical guidelines, human resources,The care system for infections caused by health services,microbiology laboratory support,environment, monitoring and evaluation,communication with public health has been done.

Results: According to the results of this study,the average percentage of points obtained from the main components of the IPC program is as follows:organization of infection prevention and control program (100%),technical guidelines (84%),human resources (95%),care system for infections caused by health services.(78.26%),microbiology laboratory support(89.4%), environment(88.23%),monitoring and evaluation (100%),communication with public health (87.5%).The average percentage obtained from all aspects of the program is 89%.

Conclusion: The infection control program in healthcare centers is designed to provide medical services and prevent infectious diseases.Studies by the World Health Organization show that 15.2% of countries comply with the requirements and regulations of infection prevention and control programs.Hospitals should use infection prevention and control programs to improve the care system for infections caused by health care.Improving the level of awareness,attitude and performance of employees regarding infection control,improving the cleaning,disinfection and sterilization processes,improving the infectious waste management process,improving standard precautions,controlling the outbreak of infectious diseases and reducing antibiotic resistance in health service delivery units as Effective solutions to reduce hospital infections and reduce deaths from hospital infections and save costs and increase the satisfaction of service recipients.

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Factors Affecting Infections Associated with Implanted Venous access Ports in Cancer Patients Receiving Chemotherapy: A Systematic Review

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ARTICLEINFO

Posters

Keywords:
Infection; Implanted venous access; Cancer patients; Chemotherapy; Systematic review

ABSTRACT

Introduction: Central venous catheters are superior to peripheral vascular access for chemotherapy. Implantable venous access ports are more common for cancer patients. Infections related to the central line can be one of the important complications of these devices. This systematic review aimed to provide factors affecting infections associated with implanted venous access ports in cancer patients receiving chemotherapy.

Materials and Methods: A systematic search of PubMed, Web of science, Embase, and the Cochrane Library was carried out from inception through Oct 2024, with no language restrictions. The keywords for searching included ("infection(s)", "bloodstream infection", "implanted venous access ports", "Chemotherapy".) After checking the title and abstract of the articles and removing duplicate articles, the quality of the articles was checked by the researchers and finally, 22 articles were data extraction in the study. The risk of bias in the included studies was assessed by the Cochrane Collaboration Risk of Bias Tool (ROBs). This review has defined the inclusion criteria of articles based on the PICOS approach. In adult(age18) patients undergoing chemotherapy(P), that have examined Factors affecting (I), for the infections associated with implanted venous access ports (O), Only randomized clinical studies(S) and have full text have been reviewed.

Results: Several studies have identified that older age, more complex, and high-dose chemotherapy regimens were associated with a higher risk of developing infection. Also, infection reduction was greatest in outpatients compared to hospitalized patients receiving port. Patients undergoing long courses of Chemoradiotherapy and taking high doses of narcotic painkillers were diagnosed with late complications of infection. Management of catheter infection depends on the identity of the organism causing the infection, the clinical and radiographic manifestations of a complex course, the underlying condition of the host (neutropenia, thrombocytopenia), and the availability of other vascular access sites.

Conclusion: Identifying factors affecting the occurrence of infections related to implantable venous access ports can help healthcare providers, especially nurses, in managing and reducing the risk of infection.

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Frequency of Nosocomial Infections in a Tertiary Care Referral Hospital (Alzahra), Isfahan, Iran

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ARTICLEINFO

Posters

Keywords:
Frequency, Ventilator associated infection, Iran, Isfahan, Alzahra, *Klebsiella Pneumonia*

ABSTRACT

Introduction: Now a day a global threat to public health could be mentioned as a resistance to available antibiotics. The aim of this preliminary study was a retrospective survey associated with the frequency of health care associated infections (HAIs) in a tertiary care referral hospital (Alzahra), Isfahan, Iran.

Materials and Methods: Data of this retrospective study obtained from the main tertiary hospital in Isfahan, Iran that contains 931 beds and 50 wards. Clinical and demographic data between the years 2016 to 2022 were extracted from the official database of hospital NIs records. Data were analyzed using SPSS version 20.

Results: Approximately 237212 patients attended Alzahra Isfahan tertiary hospital for a period of 5.5 years. Calculated value for HAIs showed 2%, that in more than 50%, the infectious events were associated with ventilator associated events. The main pathogens were as follow: *Klebsiella pneumonia*, *Acinetobacter baumannii* and *Staphylococcus*. Whole country data (Iran) showed 32% *Klebsiella pneumonia*, 23% *Acinetobacter baumannii*,14% *Enterococcus* and so on. Resistance (R %) in Isfahan versus whole country confirmed for: *Klebsiella pneumonia* (Cephalosporin R= 80.9 vs. 82%), Fluoroquinolones (R= 76.6 vs. 73%), Beta-lactamase inhibitors (R= 75 vs. 79%), Carbapenems (R=65.7 vs. 66%) and so on respectively.

Conclusion: Resistance to Cephalosporins, Fluoroquinolones are increasing. Facilities and poor conditions of hospitals, lack of rules for obey of healthcare staff from the supervisor of hospital infection control needs further attention from hospital and universities chiefs.

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Hand Hygiene Importance in Intensive Care Units Settings

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ARTICLEINFO

Posters

Keywords:
Hand hygiene, Intensive care unit, Infection, Posters

ABSTRACT

Introduction: Hand hygiene (HH) is a key infection control measure, particularly in ICU settings, where patients are highly vulnerable to healthcare-associated infections (HAIs). ICU environments present unique challenges, including frequent patient contact and invasive procedures, which increase the risk of infection transmission.
Materials and Methods: A systematic review was conducted on HH compliance and intervention strategies in ICUs, using data from SCOPUS, PubMed, and MEDLINE (2010–2024). Studies included randomized trials, observational studies, and meta-analyses focused on HH interventions and outcomes in critical care.
Results: Research shows that adherence to HH practices in ICUs can reduce HAIs by up to 50%. Alcohol-based hand sanitizers (ABHS) are proven more effective than soap and water in routine care situations. Direct observation, automated monitoring systems, and real-time feedback improve HH compliance rates. ICU-specific interventions, such as the strategic placement of ABHS dispensers, staff education programs, and HH audits, have shown a marked decrease in infection rates, particularly for central line-associated bloodstream infections (CLABSIs) and ventilator-associated pneumonia (VAP).
Conclusion: HH remains a fundamental component in preventing HAIs in ICUs. Multimodal strategies—comprising staff education, real-time monitoring, and improved access to ABHS—are essential to enhancing compliance. ICU environments benefit most from targeted HH interventions, which not only lower infection rates but also improve overall patient outcomes. Future efforts should focus on developing cost-effective, scalable HH technologies to optimize infection control in resource-limited settings.

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Hand Hygiene, the Key to Preventing Infection: Investigating the Role of Proper Hand Washing in Hospital Infections

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ARTICLEINFO

Posters

Keywords:
Hand hygiene, Prevention, Hospital infections

ABSTRACT

Introduction: In the realm of healthcare, prevention of infection is paramount for ensuring patient safety and improving outcomes. One of the most fundamental that often overlooked practices in this effort is proper hand hygiene. With the rise of antibiotic-resistant bacteria and an increasing number of hospital-acquired infections (HAIs), the importance of hand washing has never been clearer. This article delves into the critical role of hand hygiene in hospital infections.

Materials and Methods: To find articles related to the topic, search in Persian and English databases such as PUBMED, SCOPUS, SID and GOOGLE SCHOLAR using the keywords from 2018 to 2024 was conducted

Results: The studies conducted on the effect of hand hygiene on reducing hospital infections yielded significant and positive results, reinforcing the critical role that proper hand washing plays in infection prevention within healthcare settings. 1. Reduction in Hospital-Acquired Infections (HAIs) Across various healthcare facilities that implemented structured hand hygiene interventions. The findings revealed an average reduction of up to 40% in infections related to central line-associated bloodstream infections (CLABSIs) and surgical site infections (SSIs). These results indicate a direct correlation between improved hand hygiene practices and a decline in infection rates. 2. Improved Patient Outcomes: Enhanced hand hygiene practices were linked to better patient outcomes. Hospitals reported shorter average lengths of stay for patients with HAIs, as well as lower readmission rates. Additionally, patient satisfaction scores increased, likely due to the perceived emphasis on safety and quality of care resulting from rigorous infection control measures. 3. Economic Benefits: The implementation of proper hand hygiene not only contributed to improved clinical outcomes but also yielded considerable financial benefits. Hospitals experienced a reduction in costs associated with managing HAIs, including reduced expenditures on patient treatment and the avoidance of penalties related to infection rates.

Conclusion: The evidence presented highlights the profound impact of effective hand hygiene practices on the prevention of hospital-acquired infections. The findings demonstrate that simple yet crucial hand washing can lead to significant reductions in infection rates, enhanced patient outcomes, and meaningful economic benefits for healthcare facilities

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Hand Hygine and HealthCare Associated Infections; Review Article

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ARTICLEINFO

Posters

Keywords:
Hand hygiene, Infections, Healthcare, HAIs, Compliance, Harm effects, Infection prevention

ABSTRACT

Introduction: Control of infection is the most important step for quality of care in any hospitals. For more than a century it is well known that hand hygiene has been accepted as the most commonly routine performance for infection control within hospitals. The aim of this systematic review was to address an updated review regarding hand hygiene and health care associated infections (HAIs).
Materials and Methods: This is a focused, in-depth consequent guide approach and literature search based on the PRISMA 2020 checklist, with a methodically assessment associated with the terms "hand hygiene and HAIs" that was done through Pubmed, Scopus and Web of Science from their inception to Sep 2024.
Results: In the mid-19th century the importance of hand hygiene was first recognized by Ignaz Semmelweis and Florence Nightingale. Within hospitals a primary source is the transmission of hospital acquired infections by health care workers. In observational studies hand hygiene compliance and HAIs showed a negative association up to approximately 60% hand hygiene compliance. Another study confirmed that compliance to hand hygiene was associated with decrease in HAIs. They confirmed that attention to hand hygiene could be cost-effective and simple in prevention of HAIs. Patients at intensive care units are more at risks for HAIs and a higher use of invasive procedures.
Conclusion: Studies reported a value of 19% to 100% versus 9% to 33% in the hospital setting versus long term care facilities for hand hygiene compliance. Attention to all updated advice from supervisor of infectious disease control from all health workers recommended in order to reduce hand hygiene compliance

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High-risk pregnant women's experiences of the receiving prenatal care in COVID-19 pandemic: a qualitative study

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ARTICLEINFO

Posters

Keywords:
Pregnancy, High risk, Pandemic, COVID-19, Prenatal care

ABSTRACT

Introduction: Women with high-risk pregnancies are among the most vulnerable groups that require additional precautionary measures against the spread of COVID-19 plus receiving prenatal care. Yet, there is limited information on the status of prenatal care in women with high-risk pregnancies. The purpose of this study was to explore the experiences of women with high-risk pregnancies who were receiving prenatal care during the COVID-19 pandemic.

Materials and Methods: The present qualitative study was conducted on mothers with high-risk pregnancies from September 2020 to March 2021. Purposeful sampling continued until achieving data saturation. Ghaem, Ommolbanin, and Imam Reza in Mashhad, Iran served as the research environment. Face-to-face and semi-structured interviews were effective data collection methods. Each interview lasted between 20 to 45min (on average 30). The total number of participants was 31. Data analysis was carried out simultaneously with data collection using the qualitative content analysis method developed by Granheim and Landman (2004).

Results: Following the reduction and analysis of data from women in high-risk pregnancies, as well as their perceptions and experiences with health services during the COVID-19 pandemic, eight subcategories and three main categories were identified, including 1) "Negative psychology responses," 2) "Adoption behavior," and 3) "Adjustment of health services in mutual protection." Fear, anxiety, stress, feelings of loneliness, sadness, depression, guilt, doubt and conflict in receiving services were examples of negative psychological responses. The adaptive behaviors' category referred the behaviors of women with high-risk pregnancies in the context of the COVID-19 pandemic. The Adjustment of health services in mutual protection indicated that health workers took preventive and protective measures against COVID-19, which, in addition to protecting themselves and their clients against COVID-19, gave women a sense of security.

Conclusion: Receiving prenatal care during the COVID-19 pandemic presents challenges for women with high-risk pregnancies, negatively impacting their psychological state and health-seeking behavior. Supportive and preventive care can ensure that women with high-risk pregnancies receive optimal prenatal care that focuses on COVID-19 prevention. We recommend implementing screening, psychological counseling, and education for women with high-risk pregnancies, as well as ensuring that they have access to women-centered health care services.

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Hospital Management in the Face of Microbial, Radiation and Nuclear Accidents: A Systematic Review

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ARTICLEINFO

Posters

Keywords:
Preparedness for emergency situations, Hospitals, Accidents

ABSTRACT

Introduction: Hospitals are the front line of dealing with accidents. Some of these accidents occur as a result of some factors, including industrial accidents, natural diseases, and regional accidents, which are called chemical, microbial, toxic, and nuclear accidents. The result of this research has been done with the aim of reviewing hospital management in microbial, radiation and nuclear accidents.

Materials and Methods: Hospitals are often the front line of dealing with incidents. Some of these accidents occur as a result of a wide range of events, including industrial accidents, natural disease outbreaks, and regional accidents, which are called chemical, microbial, radiation, and nuclear accidents. Therefore, this research was conducted with the aim of reviewing hospital management in the face of microbial, radiation and nuclear accidents.

Results: According to the results of the studies, to play an effective and efficient role for hospital management, it is a necessity to ensure the hospital's readiness in terms of facilities, equipment and staff preparation. Due to the lack of sufficient resources in the provision of facilities, equipment and medical consumables, hospital managers usually pay the most attention to performing daily tasks. Also, the problems facing the management of such crises include identifying dangerous substances, evacuating citizens after the accident, providing medical care for victims and protecting them from exposure to dangerous substances. Today, the goal of crisis prevention includes three issues: preparation for accidents, prevention It is reported about the occurrence of accidents and reducing their effects when they occur.

Conclusion: According to the results of the conducted studies, the level of management of the country's hospitals was often evaluated at a weak level, which requires the attention of the officials to this issue and the creation of serious and quick measures to increase these preparations

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Impact of Cosmetic Use by Operating Room Staff on Infection Control: A Comprehensive Review

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ARTICLEINFO

Posters

Keywords:
Cosmetic use, Operating room Staff, Infection control

ABSTRACT

Introduction: Surgical site infections (SSIs) pose a significant risk to patient safety, emphasizing the necessity for stringent infection control measures in the operating room (OR). The influence of cosmetic use by OR staff on infection control practices has gained attention, necessitating a thorough investigation into its implications. Objective: This review aims to explore the effects of cosmetic use by operating room personnel on infection control, highlighting associated risks and proposing innovative strategies for mitigating these challenges.

Materials and Methods: A systematic review of literature was conducted, analyzing recent studies addressing the correlation between cosmetic use and infection control in surgical settings.

Results: Evidence suggests that cosmetics can harbor microorganisms, potentially increasing the risk of SSIs. Furthermore, the presence of cosmetics may compromise the effectiveness of personal protective equipment (PPE) and hinder adherence to aseptic protocols.

Conclusion: Limiting cosmetic use in the OR is essential for enhancing infection control practices. Implementing educational initiatives and clear policies can foster a culture of safety, ultimately protecting patients and healthcare professionals alike.

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Infection Control and Patient Safety: A Review of Current Practices and Their Outcome

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ARTICLEINFO

Posters

Keywords:
Infection control, Healthcare-associated infections (HAIs), Patient safety, Hand hygiene, Personal protective equipment (PPE)

ABSTRACT

Introduction: Infection control is a critical component of patient safety in healthcare settings. Effective infection prevention strategies can significantly reduce morbidity and mortality rates associated with healthcare-associated infections (HAIs). This review aims to assess current infection control practices and their impact on patient safety outcomes.

Materials and Methods: A systematic review was conducted following the PRISMA guidelines. We searched PubMed, Scopus, and Google Scholar for studies published between 2018 and 2024 that evaluated infection control measures and patient safety outcomes. A total of 150 articles were initially identified, and after applying inclusion and exclusion criteria, 35 studies met the criteria for analysis. Data on infection rates, adherence to guidelines, and patient outcomes were extracted and analyzed.

Results: The review revealed that adherence to hand hygiene protocols, use of personal protective equipment (PPE), and environmental cleaning were the most frequently implemented infection control measures. Improved adherence to these practices was associated with a significant reduction in HAIs and enhanced patient safety outcomes, including reduced length of hospital stays and lower rates of readmission. However, barriers to adherence, such as lack of staff training and inadequate resources, were identified. Conclusion: The review highlights the importance of robust infection control practices in improving patient safety outcomes. Continuous training, resource allocation, and regular monitoring of compliance with infection control guidelines are essential to sustain improvements in patient safety.

Conclusion: The findings of this review underscore the need for a multifaceted approach to infection control, involving education, policy implementation, and ongoing evaluation of practices. Future research should focus on the long-term effects of enhanced infection control strategies on patient safety and the integration of technological advancements in infection prevention.

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Infection Control and Safety in Accidents and Disasters

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ARTICLEINFO

Posters

Keywords:
Infectious diseases,
Disasters and accidents,
Infection control

ABSTRACT

This article examines the relationship between natural disasters and the spread of infectious diseases. Natural disasters can increase the risk of various infectious diseases among survivors and rescuers. Depending on the type of disaster, diseases can play different roles and in some cases they can be the main cause of the disaster. With the keywords infectious diseases, disasters and infection accidents, infection control, water-borne diseases, vector-borne diseases, disaster risk reduction, through the Google search engine in scientific databases such as Papmet, Scopus, ProQuest, SID and specialized sites of the international database. Natural Disaster Management Strategies, World Health Organization, Natural Disaster Epidemiology Research Center and Center for Disease Control and Prevention were searched. The materials in the mentioned sources were analyzed and the main points were extracted using a qualitative method. Some authors believe that the risk of infectious disease outbreaks in disasters has been overemphasized and has led to unnecessary public health activities. In acute disasters, deaths result from direct or secondary effects of the disaster. These effects can include the destruction of water resources and services to be hygienic and as a result lead to an increase in infectious diseases. Chronic conditions such as drought and famine can also cause health problems.

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Infection Control Challenges in Obstetrics and Maternity unit. A systematic review

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ARTICLEINFO

Posters

Keywords:
Infection, Control, Maternity

ABSTRACT

Introduction: Infection control in maternity wards is a critical concern that has an impact on the health and safety of both mothers and newborns. Maternity wards face unique challenges in preventing and managing infections due to the vulnerable nature of their patients and the specific procedures involved in childbirth.

Materials and Methods: The present systematic review was performed based on PRISMA guidelines. All published studies except qualitative study that examined the infection control of maternity units were included. PubMed/Medline, Scopus, Web-of-science, ScienceDirect and Google Scholar were searched using related keywords until 2 September 2024.

Results: A total of seven studies comprising met the inclusion criteria and were analysed. Based on the results, Infrastructures, Lack of Specific guidelines and policies, Following the routine and obeying other people, especially experts, The need for training, lack of knowledge of control policies, Lack of supervision were the main challenges in controlling infection in obstetrics departments.

Conclusion: The results indicate that despite the fact that maternal sepsis is one of the causes of maternal mortality, the role of human resources in addition to equipment is still very prominent, and training and supervision of staff performance should be considered.Therefore, it is recommended to design educational interventions, formulate specific guidelines.

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Infection Control in Disaster and Posters Practice

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ARTICLEINFO

Posters

Keywords:
Disaster, Healthcare associated infections, Posters

ABSTRACT

Introduction: Disasters, whether natural or man-made, exacerbate the risk of healthcare-associated infections (HAIs) due to disrupted healthcare services, overcrowding, and compromised sanitation. In these crisis situations, infection control becomes essential to prevent outbreaks, especially in critical care Posters.

Materials and Methods: This review analyzes data from studies retrieved from SCOPUS, PubMed, and MEDLINE databases (2010–2024), focusing on infection control in disaster settings. Search terms included "disaster Posters," "infection control," "healthcare-associated infections," and "emerging infectious diseases." Randomized controlled trials and observational studies were assessed.

Results: Findings indicate that infection control strategies in disaster scenarios include prioritizing rapid deployment of sanitation units, hand hygiene supplies, and the use of portable isolation rooms. Emergency preparedness plans that integrate infection prevention protocols can reduce infection rates by up to 50%. Critical Posters interventions, such as proper wound management, barrier precautions, and swift triage, have significantly lowered infection risks during crisis responses. Moreover, mobile healthcare units with automated sterilization systems were found to be highly effective in reducing pathogen transmission in makeshift hospitals.

Conclusion: Disaster scenarios pose unique challenges for prevention of infection. Posters interventions, coupled with comprehensive infection control measures, including rapid hand hygiene deployment, sterilization protocols, and portable isolation units, play a crucial role in minimizing HAIs. Proactive preparedness strategies, continuous Posters education, and robust infection control frameworks are essential for improving outcomes in disaster-affected healthcare settings. The review underscores the importance of ongoing investments in disaster Posters to enhance infection prevention capabilities and protect patient health during emergencies.

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Infection control strategies in immunocompromised patients: achieving maximum prevention with minimum risk

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ARTICLEINFO

Posters

Keywords:
Infection control, Immunocompromised patients, Management, Prevention

ABSTRACT

Introduction: Throughout their lifetimes, Immunocompromised patients encounter difficulties, and infections are a major contributor to both their hospitalization and death rates.Because of their greater susceptibility, infection control in these patients is crucial and necessitates a multimodal approach that might involve a variety of care and treatment techniques meant to lower infection risks and enhance quality of life.We will look at the difficulties and methods of infection control in these individuals in this review study.

Materials and Methods: Using the keywords infection control, immunocompromised patients, immunocompromised patients' safety, immunocompromised patients' management of infections, and prevention strategies, this study was completed on time. English-language publications on the evaluation of infection control procedures pertaining to immunocompromised patients were assessed on PubMed and Google Scholar between 2018 and 2024.

Results: Recent studies have highlighted various challenges and care and treatment strategies in this vulnerable population; antibiotic management is one of the main challenges in these patients, as optimal use of antibiotics and precise testing in this area are considered essential. Environmental controls include placing patients in single rooms with HEPA filters and proper ventilation. Another effective strategy is the strict adherence to hand hygiene and the use of personal protective equipment (PPE) by healthcare staff. In addition to the above, nutritional considerations such as a neutropenic diet, which limits the consumption of foods containing harmful bacteria, are important for these patients. Continuous monitoring and surveillance of infections lead to early detection of their outbreaks. Ultimately, vaccination and educating healthcare staff are considered effective methods of infection prevention.

Conclusion: Immunocompromised patients require specialized infection control techniques. While tremendous progress has been made in managing infections in immunocompromised patients, the primary difficulty remains the urgent need for comprehensive recommendations that include all elements of infection control. Implementing such guidelines can greatly minimize the risk of infection in this population, enhance patients' quality of life, and eventually meet the aim of maximal prevention with minimal risk.

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Infection Prevention in Posters Intervention

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ARTICLEINFO

Posters

Keywords:
Infection control,
Posters interventions,
Hand washing

ABSTRACT

Introduction: Infections related to care and health services cause important complications such as increased delayed mortality. In the repair of surgical wounds, occupying hospital beds and prolonging the duration of hospitalization increases the costs and at least 20% of them can be prevented, and in the meantime, Posters measures play a significant role in infection control, so research related to infection control and Prevention was done in Posters interventions.

Materials and Methods: The current research method is of library type, and to do it, first, he searched for suitable databases in this field, and then, taking into account the research objectives, the key words were selected.

Results: Hand washing in various Posters procedures such as urinary catheterization, establishing intravenous line and safe injections, airway suction and intubation of patients, wound dressing, and observing aseptic points in them can reduce the effects of infection in patients.

Conclusion: Compliance with infection control points in Posters measures will reduce the cases of infection in patients.

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Intervention Based on the Training in Improving the Quality of Microbiology Diagnosis in Mashhad University of Medical Sciences Hospitals

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ARTICLEINFO

Posters

Keywords:
Microbiology, Antimicrobial resistance, Infection control

ABSTRACT

As we know microbiology department of medical labs has a key role in the detection and reporting the antimicrobial resistance, and in discovering and controlling new pathogens (e.g. COVID-19) and infectious diseases. Thus, staff of the clinical microbiology labs needs to be a lifelong learner. Since all the processes of the microbiology department of a medical diagnostic laboratory are manual the accuracy of results is very dependent on the expertise and precision of the expert there is a need for special attention in the field of quality control. The present study for the first time, aimed to assess the effectiveness of the intervention based on the training of the microbiology staff in Mashhad University of Medical Sciences hospital labs, which was evaluated to improve the quality of the services of this department. This study included three main steps (1) pre-analytic intervention, (A- revising the sampling and sample transferring errors; B- communication with hospital infection control officials regarding pre-analytic errors), (2) Analytic intervention, (A- review the previous reports of hospital condition assessment, B- organizational training courses face to face, webinars, and social media based on staff needs), and (3) Post-analytic intervention. Comparing the results of pre-and post-intervention indicated that training-based intervention significantly reduces non-compliance, and improves the implementation level of the quality assurance program and subsequently the services provided. Since test results play a key role in diagnosis, treatment, and infection control, the existence of a quality control mechanism is very important and antimicrobial resistance and contaminations (e.g. blood culture contaminations) reports can be reliable, if there are no laboratory errors in the process of the test and the presented result is the patient's condition.

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Investigating Barriers to Hand Hygiene in Nurses of Shahidan Mobini Sabzevar Hospital

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ARTICLEINFO

Posters

Keywords:
Hand hygiene, Barriers

ABSTRACT

Introduction: The best, most effective and least expensive way to prevent hospital infections is hand hygiene, especially hand washing before and after contact with each patient. The research shows that the personnel have a poor performance in this regard. Despite the great importance of hand hygiene by medical personnel, the results of a study showed that the lack of knowledge and awareness of employees about the complications caused by not washing hands is considered as one of the important obstacles to hand hygiene. The present study was conducted with the aim of determining the barriers to hand washing from the point of view of nurses working in Shahidan Mobini Hospital under Sabzevar University of Medical Sciences in 2023

Materials and Methods: This study was a descriptive-analytical and cross-sectional study that was conducted on 100 nurses working in a teaching and therapeutic hospital under Sabzevar University of Medical Sciences. The data collection tool was a valid and reliable questionnaire consisting of two parts of demographic characteristics and 48 items related to obstacles to hand hygiene in the four areas of personal, managerial, equipment and environmental obstacles. Data analysis was done using SPSS 21.0 software and independent t-tests and one-way analysis of variance. A significant level of 0.05 was considered.

Results: The results showed that equipment barriers had the highest mean (2.80±0.64) and individual barriers had the lowest mean (2.79±0.45). Also, there was a statistically significant relationship between the average of environmental and equipment barriers with employment status. (P-value=0.05)

Conclusion: According to the findings of the research, in order to remove the barriers to hand washing in nurses, suggestions can be made such as providing timely and sufficient hand washing facilities as well as suitable disinfectants, holding training workshops and building culture in the hospital to increase compliance. Hand hygiene, the use of appropriate monitoring and motivational systems, etc

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Investigating the Awareness of Psychiatric Patients about The Standard Hand Washing Method and The Effect of The Educational Program on Improving This Awareness

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ARTICLEINFO

Posters

Keywords:
Patient education, Hand hygiene, Infection control, Psychiatric patients

ABSTRACT

Introduction: Hand hygiene is very important to prevent hospital infections. Also, hand hygiene of patients is as important as hand hygiene of hospital staff. Hospital-acquired infection rates continue to be a concern throughout health facilities. In addition, hospital-acquired infections (HAIs) can lead to longer stays, higher healthcare costs, and higher mortality rates. This study was conducted with the aim of investigating the knowledge of psychiatric patients admitted to Ibn Sina Hospital in Mashhad about the standard hand washing method and the effect of the educational program on improving this knowledge.

Materials and Methods: This analytical-interventional study was conducted on 40 patients admitted to Ibn Sina Psychiatric Hospital of Mashhad University of Medical Sciences. Data were collected in two stages (before and after training) with the help of practical observation by trained experts. The training of the standard hand washing method was carried out using the "WHO guidelines on hand hygiene in health care" and as a short class between two stages.

Results: Eighty-five percents of patients (34 people) from the positive consequences of hand hygiene, 75% (30 people) from the complications caused by the transmission of infectious diseases through hands, 30% (12 people) from the correct hand washing method, 65% (26 people) the need to use handwashing liquid, 70% (28 people) were aware of the necessary times to wash hands. After the implementation of the educational program, the mentioned items increased significantly. Also, patients reported that they were satisfied with the provision of health education by nurses.

Conclusion: Since, based on the findings of this study, with proper education, many infectious diseases can be prevented with the help of increasing awareness in psychiatric patients, therefore, educational courses should be held during admission, during hospitalization and at the time of discharge with appropriate content for patients. It is recommended in care and treatment programs.

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Investigating the Awareness, Attitude and Performance of Pediatric Staffs towards Hospital Infections

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ARTICLEINFO

Posters

Keywords:
Awareness, Attitude and performance, Pediatric staffs, Hospital infections

ABSTRACT

Introduction: Healthcare-associated infections are among the most common health problems worldwide, leading to increased costs, prolonged recovery, disability, and death among patients. The prevalence of hospital infections in Iran has been reported to range from 0/32% to 9/1%. hospital service staffs are directly and indirectly involved in the rate and prevalence of hospital infections and They are exposed to these infections during waste disposal and cleaning and disinfection of the environment and surfaces, Therefore, their lack of knowledge about the principles and protocols of disinfection, sterilization and sanitary disposal of waste and cleaning of different parts of the hospital affects the spread and control of hospital infections. this study aimed to investigate the knowledge, attitudes, and performance of pediatric service staffs regarding hospital infections at the Specialized and Super-Specialized Children's Hospital in Rasht in 1403.

Materials and Methods: This cross-sectional study utilized a demographic information questionnaire and knowledge, attitudes, and performance of nurse aids and service staffs regarding nosocomial infections questionnaire, consisting of three sections. The questionnaire was designed and psychometrically evaluated in 2019. The study was conducted at 17 Shahrivar Hospital in Rasht, with a sample size of 120 service staffs selected through convenience sampling.

Results: The study results showed that the knowledge level of Pediatric service staffs regarding hospital infections was favorable (10/9±1/9), and the attitude of most of them was positive (59.3%). Meanwhile, their performance was in the average range (39/6±2/9). Also, the results showed that age, general work experience, and education level were factors related to the knowledge and attitude of hospital service staffs, and work experience and education level were factors related to their performance (P≤0/05).

Conclusion: In general, the results show that the average performance of hospital service staffs, despite their knowledge and positive attitude, indicates the need to use more practical and practical training to improve the performance of hospital service staffs in addition to their understanding.

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Investigating the Causes of Neonatal Sepsis

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ARTICLEINFO

Posters

Keywords:
Sepsis, Late infection, Early infection, Neonatal intensive care unit

ABSTRACT

Introduction: Sepsis is the main cause of death in the neonatal unit and it leads to many complications, including increasing the length of hospitalization of newborns. Sepsis includes two early types (EOS) (prenatal and delivery infection) and late type (LOS) (hospital infection). In order to prevent these infections, it is necessary to know the causes of these infections. The purpose of this review is to determine the causes of blood infection in infants.

Materials and Methods: A systematic review was conducted without time limit to access related articles in SID, MAGIRAN, PUBMED, SCOPUS and GOOGLESCHOLAR databases.

Results: Seven studies were included in the meta-analysis. Babies get bacteria that cause neonatal sepsis from the blood, skin or vaginal canal of the mother before and during delivery or from the environment. The causes of sepsis are changing over time and by changing the lifestyle of mothers and the model of care in the neonatal unit. The causes of sepsis in developed countries are gram positive and in developing countries, gram negative. The main pathogen of EOS in developed countries has been reported in different reports, group B streptococcus. Coagulase-negative staphylococci are the most common cause of LOS.

Conclusion: Considering that sepsis is one of the most important causes of death in infants, it is recommended to observe hygiene and increase the quality of care in the neonatal department by medical personnel and mothers.

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Investigating the Effect of Using Chlorhexidine Gluconate-Containing Dressings on the Incidence of Central Line-associated Bloodstream Infections (CLABIs) in Patients with Central Venous Access

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ARTICLEINFO

Posters

Keywords:
Central line-associated bloodstream infections (CLABIs), Dressing, Chlorhexidine Gluconate

ABSTRACT

Introduction: Central venous catheterization is one of the most common procedures in Intensive Care Units (ICUs). One of the frequent complications of these catheters is central line-associated bloodstream infections (CLABSIs). Chlorhexidine gluconate (CHG) is a substance with antimicrobial properties that may reduce the incidence of these infections when added to the dressings covering the central lines. Therefore, the aim of this study is to investigate the impact of using chlorhexidine gluconate-containing dressings in reducing the risk of CLABSIs.

Materials and Methods: Initially, a comprehensive search was conducted using the PubMed and Magiran databases, and Google Scholar search engine, utilizing the keywords central line-associated bloodstream infections (CLABIs), Dressing, and Chlorhexidine Gluconate within 2014 to 2024, resulting in 39 articles. Articles that were most relevant to the current study's title were included, while unrelated articles were excluded from the review. Ultimately, 6 articles related to the subject were examined and analyzed.

Results: In reviewing the studies conducted, two clinical trials and one cohort study suggested the use of dressings containing chlorhexidine to reduce CLABIs, while one clinical trial did not report any positive effects. Additionally, one study demonstrated the superiority of these dressings over transparent dressings, whereas another study found no difference in the use of these two types of dressings.

Conclusion: Based on the results of the studies reviewed, it can be concluded that dressings containing CHG can be considered as one of the preventive methods for CLABIs alongside other measures. Further research is needed in the future to evaluate the cost-effectiveness of this method, as well as to investigate and study various types of chlorhexidine-containing dressings, such as transparent dressings, skin patches, and chlorhexidine-impregnated sponge dressings.

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Investigating The Incidence of Nosocomial Infections in The Hospital Infection Care System in The First 6 Months of 1403 in Amirul Mominin Bandar Gnaveh Hospital

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ARTICLEINFO

Posters

Keywords:
Hospital infections, Epidemiological investigation, Care system

ABSTRACT

Introduction: Hospital infections or infections related to care health services are of considerable importance and are a common problem in all countries of the world. These infections are a constant threat to the effective and correct functioning of health service centers; this study was conducted to determine the prevalence of hospital infection and its related factors in Amirul Mominin Hospital in Bandar Ganaveh. Check

Materials and Methods: This descriptive-cross-sectional study was conducted for all patients diagnosed with nosocomial infections in Amirul Mominin Bandar Ganaveh Hospital in the first six months of 1403. Information was collected based on the statistics of the INIS national hospital infection control system, to diagnose the main hospital infections (respiratory, urinary, blood, surgical site, VAE), length of hospitalization, age, gender and type of pathogen.

Results: In the present study, out of a total of 3210 hospitalized patients during the first six months of 1403, the average prevalence was 68.1%. The highest rate of infection is related to infection (VAE) 33.33%, surgical infection (SSI) 37.20%, urinary tract infection (UTI) 96.12%, blood infection (BSI) with an incidence of 55.5%, the lowest rate of infection has assigned At the age of 65 years and above, the incidence of VAE and UTI was the highest. In relation to gender, the prevalence of hospital infections was 58.51% in women and 15.48% in men, and there is a significant difference in gender. The highest amount of pathogen grown was Klebsiella 66.16% and Staphylococcus aureus 11.11% respectively. Among the pathogens, Escherichia coli (ECOLI) in UTI and Klebsiella in VAE are the most common. The average duration of hospitalization until infection is reported as 5.6%. It was analyzed at a significance level of P = 0. 05.

Conclusion: Due to the fact that infection (VAE) has the highest rate of occurrence, timely diagnosis, care and reporting of all hospital infections are of particular importance and require comprehensive planning, use of knowledge, adoption of best practices and infrastructure improvement.

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Investigating the Incidence of Urinary Tract Infection and its Relationship with the knowledge and Performance of Nurses in the Prevention of Infection Caused by Urinary Tract Catheters in the Special Care Departments of Imam Ali Hospital in Zahedan

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ARTICLEINFO

Posters

Keywords:
Knowledge, Attitude, Performance, Nurse, Urinary tract infection

ABSTRACT

Introduction: Urinary tract infection is still one of the most common diseases affecting people. The aim of this study was to investigate the incidence of urinary tract infection and its relationship with the knowledge and performance of nurses in preventing infection caused by urinary tract catheters in the special care units of Imam Ali Hospital in Zahedan, in 1402.

Materials and Methods: The current cross-sectional study was conducted in 1402 in the ICU departments of Imam Ali Hospital in Zahedan. The statistical population was sampled in the form of a census, which included all nurses working in the ICU departments of Imam Ali Hospital and hospitalized patients with positive urinary infection cultures.The data was collected through the investigation of the prevalence of UTI based on the information recorded in the second 6 months of 1401 in Imam Ali Hospital, Zahedan city, by special care departments (with five departments) from the person in charge of infection control, using the nurses' demographic information form, and standard questionnaires. 2 parts knowledge and performance of nurses regarding the prevention of urinary infection caused by urethral catheter were collected. Data analysis was done with the help of SPSS-24 statistical software and descriptive, inferential and correlational statistics tests.

Results: The average prevalence of urinary tract infection was 28%. 80.6% of the participants in the present study were women and 64.4% of them were in the age range of 22-40 years. The average knowledge score of nurses was 9.30 ± 1.116, and the average score of attitude and performance was 0.851 ± 1.24, 0.506 ± 1.42, respectively. A statistically significant relationship was found between age and knowledge (P=0.038), while other demographic variables (gender, marital status, education level, work experience, workplace department and caring for a person infected or suspected of Corona) with knowledge, attitude and no statistically significant correlation was found with nurses' performance.

Conclusion: due to the high prevalence of infection, timely diagnosis, care and professional performance of nurses are of particular importance to the patient, which requires comprehensive planning, use of knowledge, and adoption of the best methods and improvement of infrastructures.

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Investigating The Key Factors Affecting Nurses' Compliance with The Implementation of Infection Control Protocols: A Narrative Literature Review

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ARTICLEINFO

Posters

Keywords:
Posters compliance,
Posters adherence,
Infection control

ABSTRACT

Introduction: Healthcare-associated infections present a significant risk to patient safety, underscoring the critical need for consistent compliance with infection control protocols among Posters staff. However, adherence levels remain inconsistent, shaped by factors across organizational, environmental, individual, and contextual domains. Organizational influences, such as clear policies, regular training, and resource allocation, are foundational to supporting compliance, while a positive workplace climate and strong team dynamics foster adherence at the environmental level. Individually, nurses' knowledge, attitudes, beliefs, and experience impact adherence, and, contextually, systemic issues like missed Posters care further complicate compliance. Recognizing these multifaceted influences is essential for designing effective interventions to improve protocol adherence. Objective: This study aims to investigate the key factors affecting nurses' compliance with the implementation of infection control protocols.

Materials and Methods: A narrative literature review was conducted; the keywords included compliance and adherence of nurses and infection control protocol. Title and abstract of articles from 2020 to 2024 that were published in PubMed, Web of Science, and Scopus databases were searched. The full text of the published articles was reviewed and based on quality check evaluation & scoring by two authors finally 16 articles were selected.

Results: Findings reveal that organizational factors strongly affect compliance, including the availability of clear policies and guidelines, which provide a foundational framework for adherence. Training programs are critical; nurses who receive ongoing education on infection control are more likely to comply. Environmental factors, including supportive workplace climate, positively influence compliance, as do collaborative social dynamics within healthcare teams. Individual factors such as nurses' knowledge, attitudes, and prior experiences with infection control significantly affect their adherence levels, with those exhibiting positive attitudes and greater experience showing higher compliance. Lastly, contextual factors, including issues of missed Posters care, suggest that non-compliance often occurs due to time pressures and competing patient care demands, revealing broader systemic challenges.

Conclusion: Improving Posters compliance with infection control protocols requires clear policies, regular training, sufficient resources, and a supportive workplace. A holistic approach addressing these factors can enhance adherence, resolve ethical dilemmas, and ultimately improve patient safety and outcomes.

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Investigating The Level of Hand Hygiene Compliance by Treatment Team Members in The Special Care Departments of Shahid Kamyab Hospital in Mashhad in 2024

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ARTICLEINFO

Posters

Keywords:
Hand hygiene, Nurse, ICU departments

ABSTRACT

Introduction: infections associated Healthcare affect hundreds of millions of people worldwide annually; Hand hygiene is widely accepted as a key strategy in the prevention and control of nosocomial infections, but adherence to recommended guidelines is often poor among healthcare workers. Due to the frequent interaction of health professionals and patients, the vital importance of hand hygiene is emphasized; Therefore, the aim of this study was to investigate the level of hand hygiene among health care workers in the special care departments of Shahid Kamyab hospital in Mashhad in 2024.

Materials and Methods: This Descriptive cross-sectional study was conducted on the staff of the ICU departments of the Medical Education Center of Shahid Kamyab Hospital in Mashhad in the first six months of 2024. In order to collect the information; the infection control supervisor (as a single supervisor) using the checklist recommended by the World Health Organization, all the working staff, including nurses, doctors, paramedics in five ICUs, were observed secretly in five periods. Observed hand hygiene. The data obtained from observation were analyzed by SPSSV2018 and descriptive statistical test.

Results: The average hand hygiene compliance in the first three months of 2024 among nurses was 37.6%, doctors were 10.27%, Helping paramedics and agents were 14%, and in the second three months of 2024 it was 64.6% among nurses, doctors were 50.4%, Helping paramedics and agents were 46% and nurses accounted for the highest percentage. The highest level of hand hygiene in nurses was reported in ICU5 ward and in the situation after exposure to blood and body fluids. The average level of hand hygiene in the second three month of the year has increased significantly compared to the first three months, which is due to the holding of face-to-face and virtual training classes.

Conclusion: According to the results of this study, it is necessary to provide more training and supervision in the field of improving hand hygiene and providing the necessary equipment for this hygienic behavior, which is the first step in preventing hospital infections.

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Investigating The Level of Hand Hygiene Compliance in The General and Special Care Departments of Shahid Kamyab Hospital in Mashhad in 2024

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ARTICLEINFO

Posters

Keywords:
Hand hygiene, General department, ICU department

ABSTRACT

Introduction: Infections associated Healthcare are one of the biggest health problems. Observance of hand hygiene is the most effective, simplest and least expensive measure to reduce pathogen transmission and hospital infections. Past studies show that direct and continuous observation and providing appropriate feedback about hand hygiene is an effective way to increase its level. Therefore, considering the vital role of hand hygiene, the purpose of this study is to investigate the level of hand hygiene among health care workers in the general and special departments of Shahid kamyab Hospital in Mashhad in the first six months of 2024.

Materials and Methods: This Descriptive cross-sectional study was conducted on the staff of general departments and ICU of Shahid kamyab Hospital, Mashhad, in the first six months of 2024. In order to collect information, the infection control supervisor (as a single observer) secretly observed the employees working in five general departments and five ICUs in five hygiene periods by using the checklist recommended by the World Health Organization. The data obtained from observation were analyzed by SPSSV2018 and descriptive statistical test.

Results: The average of hand hygiene compliance in the general departments of surgery 1, surgery 2, surgery 3, neurosurgery and orthopedics are respectively 53.5%, 47.5%, 52.12%, 47.96%, 42.03% and in the department The special cases of ICU1, ICU2, ICU3, ICU4, and ICU5 were respectively 61.32%, 72%, 48.59%, 76.08%, and 71.28%, in which the nurses had the highest level of hand hygiene. The highest level of hand hygiene is observed after contact with the blood and contaminated secretions of patients. The results indicate that the level of hand hygiene in special wards is significantly higher than in general, which can be attributed to the lower ratio of personnel to the number of patients and greater sensitivity in ICU.

Conclusion: According to the results of this study, it is necessary to provide more training and supervision in the field of improving hand hygiene, especially in helping paramedics and paramedics, and by standardizing the ratio of the number of personnel to patients and providing the necessary equipment, can take an effective step to prevent hospital infections

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Investigating The Level of Hand Hygiene Compliance of Hospital Personnel Based on Five Patient Care Positions in Kurdistan Province Medical Centers

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ARTICLEINFO

Posters

Keywords:
Hand hygiene, Five positions of hand hygiene, Patients, Hospitalization, National accreditation standards of hospitals, Kurdistan

ABSTRACT

Introduction: Observance of hand hygiene is considered the most effective, simplest and least expensive measure in the field of controlling hospital infections in the treatment of hospitalized patients, so that it is recognized as an international priority to reduce infections caused by care.

Materials and Methods: This research is a cross-sectional descriptive survey that was conducted in the hospital centers of Kurdistan province in 1402. The data collection tool was installed in the form of an application on the systems inside the hospital and on the mobile phone of the supervisors of the departments. All personnel were randomly observed by supervisors while providing health care to hospitalized patients. 5 stages of care during the hospitalization of the patient included: before contact with the patient, before aseptic procedure, after contact with body fluids, after contact with the patient and after contact with the environment by a special professional group.

Results: In this study, the rate of hand hygiene compliance was 52%, and among the professional groups of nurses, the highest percentage was 59%, and in 5 situations of hand hygiene, the highest percentage of hand hygiene was observed after contact with patient secretions, 58%, and the lowest after contact with the environment surrounding the patient was 48%.

Conclusion: According to the results of this study, the group of Posters assistants and services had the lowest level of hand hygiene and this can be considered a serious warning for this group. And the results of this study showed that the average rate of hand hygiene in the province was 52% and in a similar study in Hamedan it was 53%, the highest rate of hand hygiene in the situation after contact with patient secretions was 58% and the lowest after contact with the environment. Around the patient was 48%. And in most of the reviewed studies, wearing gloves during care is considered a bad care habit and cannot replace hand washing and disinfection in any way.

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Investigating the Prevalence Of Hospital Infections Based On Global Standards For Prevention At The Shahid Rajaei Educational And Medical Center In The First Quarter Of 1403

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ARTICLEINFO

Posters

Keywords:
Nosocomial infection, Nosocomial infection control system, Prevalence

ABSTRACT

Introduction: Nosocomial infection can aggravate the main disease and increase the mortality of patients, and imposes huge resources on the patient and the hospital, as well as health care that is related to infection is considered a threat to the safety of patients and is the most common complication of hospitalization.Therefore, it is very important to pay attention to it and take preventive measures to reduce its prevalence.

Materials and Methods: The present study is a cross-sectional descriptive study that was conducted in the first quarter of 2013 at the Shahid Rajaei Educational Medical Center.The findings were based on the information extracted from the Hospital Infection Control System (INIS) in the first quarter of 2014.

Results: According to the results extracted from the infection control system;The percentage of nosocomial infections in the whole hospital in the first quarter of 2013 is (0.64%) and the percentage of nosocomial infections in ICU departments is(3.64%).The most common type of infection related to the respiratory system and the most common type of microorganism was Klebsiella.The percentage of recorded infections was(52%) in men,(76%) the average age was over 65 years and the average hospitalization until respiratory infection (8.8 days).The highest rate of hospital infection was related to special care units.

Conclusion: Achieving hospital infection control requires the cooperation and coordination of management levels,as well as the sense of responsibility of all levels of employees involved in the patient treatment process,including doctors and nurses,etc. The most important way to control infection in hospitals is to perform simple actions such as hand washing.(the most important),training and increasing awareness in relation to the ways to prevent and control hospital infections for nurses, doctors,students, services and support personnel,optimizing and equipping hospitals with materials,necessities and equipment to control hospital infections,educational programs for patients and their companions in the field of preventing and controlling hospital infections through television programs, distributing pamphlets,posters and providing face-to-face training.By doing these actions at the hospital level,we can prevent the occurrence of hospital infections to a large extent.It is necessary to pay more attention to the control of nosocomial infections in the country's hospitals in order to reach the standard level.

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Investigation of the Pattern of Microbial Resistance in a Main Tertiary Hospital in Isfahan and Its' Comparison to Whole Country in 2022

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ARTICLEINFO

Posters

Keywords:
Microbial resistance, *Klebsiella pneumonia*, Fluoroquinolones, Cephalosporins

ABSTRACT

Introduction: Now a day a global treat to public health could be mentioned as a resistance to available antibiotics. The aim of this preliminary study was to to investigate the pattern of microbial resistance in a main tertiary hospital in Isfahan and its' comparison to whole country associated with the year 2022.

Materials and Methods: A total of 898 microbiological culture results represented non-repetitive specimens reported in 2022 were retrieved from the main tertiary hospital and analyzed for pathogens and the pattern of antibiotics resistence. The results were compared with 1026 hospitals in Iran.

Results: Out of 898 specimens; *Klebsiella pneumoniae* (n = 290), *Acinetobacter baumannii* (n=206), *Enterococcus (faecium-fecalis* n=125), *Escherichia coli* (n = 116), *Staphylococcus aureus* (n = 95), *Pseudomonas aeruginosa* (n = 66), were the most frequently isolated bacteria. Reported resitance (R) in Isfahan versus whole country confirmed that for: *Klebsiella pneumoniae* (thrird or fourth generation of Cephalosporins: R= 80.2 vs 82), Fluoroquinolones (R= 76.6 vs 73), Beta-lactamase inhibitors (R= 75 vs 79), Carbapenems (R=65.7 vs 66) and so on respectively.

Conclusion: There is an increase in proportion of isolates resistant to Cephalosporins, Fluoroquinolones and others. The variety of latent pathogens resistant to frequently administered antibiotics highlights the significance of continued and homogenous antimicrobial evidence-based pharmacotherapy investigations in Isfahan, Iran. Further studies in this direction recommended. Key Words: Microbial Resistance, *Klebsiella pneumonia*, Fluoroquinolones, Cephalosporins.

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Knowledge and Practice of Mothers in Prevention and Care of Diarrhea Diseases in Children under Five Years

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Keywords:
Knowledge, Practice, Mothers, Care, Diarrhea

ABSTRACT

Introduction: Mortality, which caused by diarrhea and unnecessary hospital admission, can be decreased by simple, available and effective methods and mothers have an important role in this regard.
Materials and Methods: This descriptive and analytical study was randomly performed on 250 mothers who had children less than 5 years of age. Data were collected by questionnaire and then analyzed by descriptive statistics, Chi-square test and correlation coefficient.
Results: The knowledge of mothers towards diarrhea (84%) was moderate and their practice (50%) was low. There was a significant relationship between the knowledge and practice of mothers with variables as occupation, educational level, husband's job and education, place of living, income, numbers of children, age of child, birth interval of children, history of diarrhea in child, information on taking care of child during diarrhea and the most important source of information. Also, there was a significant relationship between knowledge of mothers with sex of child and their practice with age (P0.05). There was a significant linear relationship between knowledge and practice of mothers (R=0.385, P=0.000).
Conclusion: Based on low practice of mothers, it is recommended to give necessary knowledge to mothers by regular educational program and make them sure that fluid therapy is effective. Therefore, they can learn necessary skills to prevent mortality of children due to dehydration.

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Midterm Follow-up of Healthy Young Adults with Moderate to Severe COVID-19: Pulmonary and Extrapulmonary Disease Sequelae

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ARTICLEINFO

Posters

Keywords:
COVID-19, Follow-up, Sequelae, Tissue Doppler imaging echocardiography, Lung CT scan

ABSTRACT

Introduction: Follow-up studies on coronavirus disease 2019(COVID-19) were mainly focused on short-term sequelae in patients with comorbid diseases. The aim of this study was to investigate the pulmonary and extrapulmonary sequelae of moderate to severe COVID-19 in the midterm follow-up of healthy young adults.

Materials and Methods: In this prospective cohort study, we used the hospital information system (HIS) to identify patients who had recovered from moderate to severe COVID-19 without comorbidity. All eligible patients were invited to participate in the study. Participants were asked to fill out a set of questionnaires to evaluate fatigue, anxiety, and post-traumatic stress disorder (PTSD). They also underwent chest computed tomography (CT) scan, pulmonary function test (PFT), and tissue doppler imaging (TDI) echocardiography. A blood sample and a 12-lead electrocardiogram (ECG) were obtained.

Results: A total of 50 recovered patients and 12 healthy controls were enrolled in the study. Fifteen out of 50 patients received intensive care. Patients had significantly higher fatigue and anxiety scores than controls. PTSD criteria were met in 29 out of 50 patients. Ground glass opacities, nodules, and subpleural lines were the most frequent abnormalities in chest CT scans of patients. Patients had significantly lower left ventricular end-diastolic diameter (LVEDD) and left ventricular end-systolic diameter (LVESD) than controls (P value 0.019 and 0.001, respectively).

Conclusion: According to our findings, COVID-19 survivors might experience anxiety, fatigue, PTSD, pulmonary impairment, leading to reduced cardiac function up to 6 months after discharge.

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Multimodal Strategies in Healthcare-Associated Infections Prevention

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ARTICLEINFO

Posters

Keywords:
Infections, Health associated infection, Prevention

ABSTRACT

Introduction: Healthcare-associated infections remain a global challenge, with critical Posters care settings, hand hygiene, decontamination, and accreditation protocols at the forefront of prevention strategies. Despite advances, infection rates in critical care settings highlight the need for enhanced, evidence-based practices.

Materials and Methods: This review synthesizes findings from SCOPUS, PubMed, and MEDLINE databases, focusing on randomized controlled trials, observational studies, and meta-analyses (2005–2024). It explores infection control strategies, including hand hygiene protocols, sterilization practices, and accreditation's role in maintaining standards. Key search terms included "hand hygiene," "accreditation in infection control," "sterilization," "Posters interventions in critical care," and "disaster infection prevention."

Results: Studies reveal that multimodal approaches—combining direct observation, feedback, and automated hand hygiene monitoring—result in a 40% reduction in HAIs. In critical care, implementing advanced sterilization protocols decreased infection incidence by 35%, particularly in disaster response situations where infection risk surges. Accreditation programs were associated with a 20% increase in infection prevention compliance, translating into significantly improved patient outcomes.

Conclusion: A comprehensive approach, emphasizing hand hygiene, decontamination, accreditation, and specific interventions for high-risk settings like ICUs and disaster scenarios, effectively mitigates HAIs. The future of infection prevention lies in integrating real-time monitoring, stringent accreditation frameworks, and rapid response in disaster situations. Adoption of these practices across healthcare settings will lead to sustained improvements in patient safety and reduced infection rates.

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Posters Strategies to Reduce Drug Resistance of Acinetobacter Baumannii in Intensive Care Units: A Comprehensive Review

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ARTICLEINFO

Posters

Keywords:
Acinetobacter baumanni, Drug resistance, Intensive care units

ABSTRACT

Acinetobacter baumannii is recognized as a significant pathogen associated with severe healthcare-related infections, particularly in Intensive Care Units (ICUs). Its high levels of drug resistance complicate treatment options and lead to increased morbidity and mortality among affected patients. This review explores effective Posters strategies to minimize drug resistance in *Acinetobacter* infections, emphasizing hygiene protocols, antimicrobial stewardship, patient-centered care, and interdisciplinary collaboration. Strict adherence to hygiene and infection control protocols, including hand hygiene and the proper use of personal protective equipment (PPE), is essential in preventing pathogen transmission. Additionally, regular disinfection of high-touch surfaces can help reduce bacterial transmission. Antimicrobial stewardship is also a critical strategy. Ongoing education for Posters staff regarding the judicious use of antibiotics and monitoring antibiotic therapy can improve prescribing practices and reduce inappropriate use. Implementing patient-centered care practices, such as proper management of invasive devices and early detection of infections, is vital in reducing infection risks associated with *A. baumannii*. Educating patients and their families about infection prevention can enhance cooperation and reduce contamination risks. In conclusion, Posters strategies that emphasize hygiene, responsible antibiotic use, patient-centered care, and collaboration are essential in combating drug resistance of *Acinetobacter baumannii* in Intensive Care Units. By implementing these measures, Posters professionals can significantly improve patient outcomes and contribute to global efforts against antibiotic resistance.

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Overview of Hand Hygiene Compliance among Healthcare Personnel

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ARTICLEINFO

Posters

Keywords:
Hand hygiene,
Healthcare personal,
Covid-19

ABSTRACT

Introduction: Hand hygiene (HH) is essential for preventing healthcare-associated infections (HAIs). Despite its recognized importance, compliance rates among healthcare personnel (HCP) remain troublingly low.

Materials and Methods: This overview synthesizes findings from various studies to highlight the current state of hand hygiene practices among healthcare workers. General Compliance: Recent studies reveal a concerning state of hand hygiene (HH) compliance among healthcare workers (HCP). One study reported an overall compliance rate of 67.88% among 583 healthcare workers, with doctors showing 74.31% compliance and nurses at 70.42%. In contrast, another study indicated that only 31% of healthcare workers regularly practiced hand hygiene, highlighting a significant adherence. Knowledge and Training Deficiencies: Approximately 59.2% of healthcare professionals reported receiving formal training in hand hygiene within the last three years. Despite this training, many demonstrated only moderate knowledge levels regarding HH practices. This indicates a significant gap between training received and the actual knowledge applied in practice.

Results: The study showed that after a structured training program, compliance rates increased significantly from 66.0% to 88.3%, and knowledge scores improved from 68.6% to 78.9%. The COVID-19 pandemic initially led to significant improvements in hand hygiene adherence among healthcare workers (HCWs), driven by heightened awareness and fear of infection. Compliance rates peaked during the early months of the pandemic, with some hospitals reporting rates as high as 100% in specific units1. However, this surge in compliance was not sustained, and by mid-2020, adherence levels had declined sharply, averaging around 50% across hospitals nationwide.

Conclusion: The evidence indicates that while awareness of hand hygiene's importance is growing, compliance remains suboptimal among healthcare personnel due to various barriers such as inadequate training, environmental constraints, and increased workload. While the pandemic catalyzed an initial improvement in hand hygiene adherence, the subsequent decline highlights an urgent need for ongoing education, resource allocation, and supportive infrastructure. Addressing the barriers faced by healthcare workers is essential for sustaining these critical practices in combating healthcare-associated infections effectively.

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Prevalence and Pattern of Nosocomial Infections in a Hospital in North East of Iran during 2017-2021

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ARTICLEINFO

Posters

Keywords:
Nosocomial infections, Respiratory tract infections, Urinary tract infections, Patient safety

ABSTRACT

Introduction: Prevalence and Pattern of Nosocomial Infections in Gonabad Bohlool Hospital during 2017-2021 Abstract Background: Nosocomial infections are one of the major healthcare issues worldwide, imposing high treatment costs, prolonged hospitalization, and mortality. Controlling nosocomial infections can improve patients' health and reduce hospital costs. Therefore, this study aimed to determine the prevalence of nosocomial infections in one of the hospitals in the northeast of Iran during 2017-2021.

Materials and Methods: In this cross-sectional descriptive-analytical study, data of 574 patients with nosocomial infections hospitalized in one of the hospitals in the northeast of Iran during 2017-2021 were extracted from the national nosocomial infection surveillance system and analyzed using SPSS v25 and appropriate statistical tests. The significance level was considered less than 0.05.

Results: The prevalence of nosocomial infections during this period in one of the hospitals in the northeast of Iran was 0.76%. The mean age of patients with nosocomial infections was 60.34±25.37 years. The mean time between admission and infection was 14.67±28.32 days, and the mean length of stay was 29.02±31.15 days. The prevalence of nosocomial infections in women was 55.6%. The highest cases were reported in 2021 by 36.7%. The most common organisms were *Staphylococcus aureus* and *Escherichia coli*, respectively. Tracheal tube and urine samples were the most frequent specimens tested, respectively.

Conclusion: Given the higher prevalence of nosocomial infections in ICU, internal wards, patients with tracheal tubes, and urinary catheters, preventive measures can be implemented in this regard.

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Review of Urinary Catheter Infection Prevention and Control Practices in Home-based Posters Care: A Scoping Review

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ARTICLEINFO

Posters

Keywords:
Infection, Urinary catheter, Posters care, Home care

ABSTRACT

Introduction: Today, home-based Posters care is expanding rapidly. These cares have received much attention due to being in a familiar environment and reducing existing costs compared to care in hospital environments. Due to the unsanitary environment and poor quality of care in the home environment, the subsequent infections are spreading and will hinder the recovery of patients. Infections caused by urinary catheters are caused by unsanitary care and lack of necessary training in patients after discharge at home. Knowing the effective factors in causing this infection, early measures for prevention and timely diagnosis can reduce the risks of urinary catheter infection. This review study was conducted with the aim of investigating methods of prevention and control of infection caused by urinary catheter in home Posters care.

Materials and Methods: This study is a scoping review. The study has been done in five stages, which are: design of the research question, search and extraction of studies related to the research, selection of related studies, tabulation and summarization of information and data and reporting of its results in foreign and domestic databases including: Information Bank Publications of the country (MagIran), Scientific Information Database of Academic Jihad (SID), Research Institute of Science and Information Technology of Iran (IranDoc), Web of Science, Science Direct, PubMed, Google scholar, Scopus.

Results: Among 185 articles, after targeting duplicate articles, 95 duplicate articles were removed. By carefully studying the title and abstract of articles with inclusion criteria by the researcher, 67 articles were removed due to being unrelated to the purpose of the study, and finally after studying the summary and full text and analyzing the articles, 13 articles were removed and 15 related articles. A review was included. These studies were reviewed to organize the findings into 5 specific domains.

Conclusion: The findings of this study showed that hand hygiene training, correct use of equipment, management of communication devices and remote care training have a significant effect in preventing urinary catheter infection and will be an effective step in improving the health of these patients.

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Hand Hygiene Compliance in Amir al-Momenin hospital during 6 months in the year 1402

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ARTICLEINFO

Posters

Keywords:
Hand hygiene, Nosocomial infection, Amir al-Momenin hospital, Patient safety

ABSTRACT

Introduction: Proper hand hygiene is an effective way to prevent the transfer of germs between staff and patients. Observance of hand hygiene as a very simple and cheap method is considered one of the most basic standards and one of the most basic measures in reducing hospital infections and increasing patient safety. The present study was carried out with the aim of evaluating the level of hand hygiene compliance of healthcare workers in Amir al-Momenin hospital in Ganaveh.

Materials and Methods: The present study is a cross-sectional-descriptive type, the total observation cases are 2100 hand hygiene situations that were conducted in the second 6 months of 1402. The method and tools of the study were, respectively, the observation of handwashing or hand washing and the performance monitoring checklist. Data analysis was done in Excel software and descriptive statistics analysis. The results were analyzed according to 5 hand hygiene positions and according to professional groups.

Results: The results showed that the overall rate of hand hygiene compliance was 59.39%, and the operating room and CCU departments had the highest level of hand hygiene compliance respectively. Also, among the 5 hygiene situations, the highest situation after contact with blood and body fluids was 96.01%, and the lowest level of hand hygiene before aseptic procedures with the patient was 27.16%, which can indicate this May the personnel care more about their safety than the patient's safety, and nurses had the highest hand hygiene compliance rate of 60.45% among different job categories.

Conclusion: In general, the level of hand hygiene was evaluated at a low level. In this regard, in order to change the attitude of the employees, culture building should be done with the help of the hospital's education and management unit.

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The Challenges Faced by Operating Room Nurses in Infection Control: Strategies and Implications

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ARTICLEINFO

Posters

Keywords:
Infection control, Operating room nurses, Surgical site infections, Aseptic techniques, Healthcare-associated infections, Patient safety

ABSTRACT

Introduction: Surgical site infections (SSIs) represent a considerable portion of healthcare-associated infections (HAIs), resulting in higher morbidity, extended hospital stays, and elevated healthcare costs. Operating room (OR) nurses play a vital role in preventing these infections by ensuring strict adherence to aseptic protocols. However, the OR environment presents unique challenges to infection control due to procedure complexity, equipment variety, and the dynamic nature of surgeries. Aim: This narrative review examines the specific challenges faced by OR nurses in infection prevention and control, explores their impact on patient safety, and presents evidence-based strategies to mitigate these risks.

Materials and Methods: A comprehensive literature review was conducted, focusing on studies related to OR Posters and infection control. Key themes were identified, including pressures in maintaining aseptic techniques, equipment handling, time constraints, staffing shortages, interdisciplinary coordination, and compliance resistance.

Results: OR nurses often encounter significant barriers to maintaining infection control, particularly in high-pressure settings such as emergency surgeries, which can lead to breaches in aseptic technique. Advanced surgical equipment requires specialized handling, further complicating infection control. Rapid room turnover and staffing shortages exacerbate these challenges, contributing to fatigue and increased risk of error. Additionally, resistance from some team members regarding infection control protocols, such as PPE and hand hygiene, undermines efforts to maintain sterility.

Conclusion: Addressing these challenges demands a multifaceted approach. Key strategies include ongoing education and training, improved interdisciplinary communication, ensuring adequate staffing, optimizing OR turnover processes, and appointing infection control champions. Prioritizing these interventions can empower OR nurses to strengthen infection prevention practices, thereby reducing SSIs and improving patient outcomes.

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The Effect of Bladder Catheterization in Delivery Room on Urinary Tract Infections, A Systematic Review and Meta-analysis

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Posters

Keywords:
Obstetric, Bladder catheterization, Nosocomial infection, UTI, Systematic review, Meta-analysis

ABSTRACT

Introduction: This systematic review and meta-analysis study was conducted with the aim of the effect of bladder catheterization on the incidence of urinary tract infections (UTIs) in women, by investigating the potential hospital nature of these diseases.

Materials and Methods: A comprehensive search was conducted in several databases, including PubMed, Cochrane Library and Scopus, on studies published up to October 2023. The primary outcome of all these studies was the frequency of UTI within the first 30 days postpartum. The risk of bias in these studies was assessed with the Newcastle-Ottawa Quality Assessment (NOS) tool. Data was analyzed using random models to calculate odds ratio (OR) with 95% confidence.

Results: In total, the data of 15 studies including 3202 participants were included in the analysis. The results showed that UTI was significantly higher in mothers who had bladder catheterization compared to mothers who had not bladder catheterization (OR=2.60, 95% CI: 1.82-3-64,). Subsequent analyzes showed that fixed catheter insertion was associated with a higher risk of infection compared to intermittent catheterization; both methods were associated with an increased risk of UTI. History of UTI during pregnancy was an important predictor of postpartum UTI.

Conclusion: Due to the increased risk of nosocomial infection following bladder catheterization during or after delivery, the use of bladder catheters in delivery rooms should be minimized. Adherence to strict hygiene protocols is necessary to reduce UTI during childbirth. It is necessary to carry out more research with the aim of improving catheterization methods and investigating alternative solutions for the management of urine retention during the labor and delivery.

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The Effect of Educational Application on Hospital Acquired Infection in Neurology Wards: A Systematic Review

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ARTICLEINFO

Posters

Keywords:
Education, Application, Hospital acquired infection, Infection, Neurology

ABSTRACT

Introduction: Hospital acquired infections (HAIs) are a significant concern in stroke wards, and the use of innovative and interactive educational applications may have a substantial and positive impact on reducing their occurrence, effectively minimizing the risk and safeguarding the well-being of patients. The present study was conducted to determine the Effect of educational application on HAI in neurology wards.

Materials and Methods: For this systematic review searched databases PubMed, Web of Science, CINAHL, Scopus and Google scholar search engine. Searching strategy was ((((((education[Title/Abstract]) AND (application [Title/ Abstract])) OR (software[Title/Abstract])) AND (infection [Title/ Abstract])) OR (hospital acquired infection[Title/ Abstract])) AND (Stroke[Title/Abstract])) OR (Cerebrovascular accident[Title / Abstract]), "education""[Title/Abstract] AND ""application""[Title/Abstract]) OR ""software""[Title/Abstract]) AND ""infection""[Title/ Abstract]) OR ""hospital acquired infection""[Title/ Abstract]) AND ""neurology""[Title/Abstract]) OR ""cerebrovascular accident""[Title/Abstract]". Search was carried out until May 2024.

Results: Initially were found 5957 articles, after eliminating duplicates, only 13 articles met the criteria to be included in the study. The use of educational applications helps to strengthen the infection prevention skills of patients and healthcare workers (HCWs) and has reduced the risk of infection in the neurology ward, although it has not had a significant effect in some studies. However, the applications used in these studies face challenges, such as users' doubts about the validity of the educational resources, which can create confusion regarding their use and delivery methods.

Conclusion: The results highlight the importance of educational applications in empowering patients and HCWs to participate in infection prevention and reducing HAIs in the neurology ward. Although these studies showed a lack of standardized efforts and emphasize the need for valuable application development. More studies are needed in this field.

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The Effect of Mobility Bundles on Non-Ventilator Healthcare-Associated Pneumonia (NV-HAP) in Hospitalized Patients: A Systematic Review

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ARTICLEINFO

Posters

Keywords:
Mobility bundle, non-ventilator healthcare-associated pneumonia (NV-HAP), Hospitalized patients, Systematic review

ABSTRACT

Introduction: Immobility is a significant risk factor for adverse outcomes in hospitalized patients, including non-ventilator healthcare-associated pneumonia (NV-HAP). Despite the established benefits of early mobilization, many patients remain in bed for extended periods, leading to complications such as pneumonia, thrombosis, and delirium. This review article explores the impact of mobility bundles on NV-HAP.

Materials and Methods: A comprehensive literature search was conducted across major electronic databases such as PubMed, EMBASE, Scopus, and Cochrane Library. The search strategy combined MeSH terms and relevant keywords to identify relevant studies. MeSH terms included: "mobility," "Non-ventilator healthcare-associated pneumonia (NV-HAP)," and "hospitalized patients." The search was limited to studies published in English. Additional filters were applied based on study design (e.g., randomized controlled trials, observational studies) and within the time frame of 2013-2023. The search results were screened independently by two reviewers based on predefined inclusion and exclusion criteria.

Results: Until recently, the emphasis for mobilization interventions was largely focused on patients in intensive care units (ICU), even though ICU patients are estimated to represent only about 10% of all acute care hospital beds. Studies have shown that 87% to 100% of a patient's time in acute care is spent sitting or lying in bed, and that immobility is associated with increased risk of death, decreased function, and cognitive impairment. Attention to mobility for patients during acute care hospitalization has been shown to decrease the risk for NV-HAP. Several studies have demonstrated that mobilizing hospitalized patients contributes to improved psychological, social, and physical outcomes, including a reduction in pneumonia. One study evaluated the effectiveness of an early mobility bundle for medical patients and found that NV-HAP incidence was significantly lower in the intervention group.

Conclusion: Unless contraindicated, early mobility should be an important part of basic care and best practice for all hospitalized patients. Implementing mobility bundles can help reduce the risk of NV-HAP and improve overall patient outcomes.

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The Effect of Teaching Infection Control Methods on The Level of Knowledge of Nurses Working in The NICU Department

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ARTICLEINFO

Posters

Keywords:
Education, Infection, Awareness, Nurses

ABSTRACT

Introduction: Caring for premature babies or those with acute diseases in the NICU requires special attention to infection control. Due to the weaker immune system and failure in the body's defense mechanisms, these babies are at high risk of contracting dangerous infections and even death. Teaching infection control methods to nurses working in this department plays an essential role in maintaining the health and improving the treatment results of these babies.

Materials and Methods: This study was conducted as a semi-experimental two-group study with a pre-test-post-test design on 60 nurses working in the NICU department of teaching hospitals in Zahedan. The samples were randomly divided into intervention and control groups. The intervention group used the infection control training class held by the researcher in the conference room of the hospital for 8 one-hour sessions. The method of data collection in this study was a questionnaire that was completed in two stages before the intervention and 3 months after the end of the intervention. At the end of the research, the collected data were analyzed by SPSS software version 27.

Results: The independent t-test did not show a significant difference between before and after the intervention in the control group, but it showed a significant difference in the test group, and this difference was observed in all dimensions of quality of life. (p0.001).

Conclusion: The results indicate that after receiving the training, nurses had a better understanding of the importance of observing the principles of infection control in the care of premature babies or those suffering from acute diseases and related to key concepts such as hand washing, using gloves and protective clothing. And how to sterilize care tools and equipment became more familiar.

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The effect of Using the Infection Control Interface Nurse Program on Nurses' Compliance with Standard Precautions in the Special Care Departments of Imam Ali Hospital in Zahedan, 1402

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ARTICLEINFO

Posters

Key words:

ABSTRACT

Introduction: Involvement of nurses in the infection control interface is a strategy that is used all over the world to prevent and control infections in hospitals. However, the impact of using this program on promoting compliance with standard precautions has been less studied. Therefore, this study was conducted with the aim of the effect of using the infection control interface nurse program on nurses' compliance with standard precautions in the special care departments of Imam Ali Hospital in Zahedan, 1402.

Materials and Methods: In this study, a pre-test was conducted using the study data collection tool including the questionnaire of compliance with standard precautions (CSPS) and factors affecting compliance with standard precautions (FIASPS). Compliance with hand hygiene was measured using direct observation method by a trained observer. Then the infection control interface nurse program was implemented. The post-test was conducted three to six months after using the infection control interface nurse program in the same way as the pre-test. 24SPSS software was used for data analysis using descriptive statistics and inferential statistics based on the objectives and hypotheses of the study.

Results: The results of the research showed that the hand hygiene compliance score has a direct and significant relationship with the infection control standard precautions compliance score (r=0.240, p=0.002) after the implementation of the infection control interface nurse program.

Conclusion: According to the results obtained in this study, it is suggested to Posters managers to use the infection control interface nurse program in order to improve the quality of care and prevent hospital infections.

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The Effectiveness of m-Health and Virtual Clinics Interventions on The Rate of Receiving Post-natal Care and Breast-feeding during The Covid-19 Pandemic, A Systematic Review and Meta-analysis Study

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ARTICLEINFO

Posters

Keywords:
MHealth, Virtual clinics, Post-natal care, Exclusive breastfeeding, Covid-19 Pandemic

ABSTRACT

Introduction: During the covid-19 pandemic, the rate of receiving the post-natal care significantly decreased. This indicates the necessity to innovative solutions. Mobile technologies (mHealth) and virtual clinics can be a suitable alternative for in-person post-natal care during pandemics. However, the effectiveness of these technologies should be evaluated. This systematic review and meta-analysis study was conducted to evaluate the effectiveness of mHealth and virtual clinics interventions on the rate of receiving post-natal care and exclusive breastfeeding during the covid-19 pandemic based on previously published studies.

Materials and Methods: A comprehensive search was conducted in several databases, including PubMed, Cochrane and Scopus, focusing on studies published from January 2020 to October 2023. Eligible studies included RCTs and observational studies searched with keywords of: mHealth, virtual clinics, post-natal care, exclusive breastfeeding and COVID-19 pandemic. The quality of interventional studies was evaluated using the ROB2 tool and the quality of observational studies using the NOS tool. A total of 18 published articles were included with more than 4500 participants. The effects of the mentioned technologies on the amount of receiving post-natal visits and the mother's satisfaction and rate of exclusive breast feeding were analyzed.

Results: Despite the heterogeneity between the published studies, the present meta-analysis showed that the use of new MHealth and virtual clinics significantly increaseS the receiving of post-natal care between the mothers technologies users compared to non-users (1/20-1/75=95% CI and 45%). The results indicate that mentioned technologies that the rate of exclusive breastfeeding and mothers' satisfaction increases significantly (15%-45%=95% CI and 30%).

Conclusion: Wide access to mHealth interventions and virtual clinic has positive results during COVID-19. Findings highlight the need for continued improvements in technology, patient support systems, and equitable access to ensure the delivery of effective post-natal care. The integration of the mentioned technologies in the systems of providing post-natal care to mothers is emphasized as an effective strategy in order to prevent and control infection in pandemics and conditions where the possibility of transmission of infectious diseases increases. Further research is needed on the long-term effects and optimization of mHealth and virtual clinic interventions.

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The Essential Role of Education of Health Professional in the Prevention of Healthcare-associated Infections

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ARTICLEINFO

Posters

Key words:
Education, Prevention, Healthcare-associated infections

ABSTRACT

Introduction: Effective health professional training is crucial in the battle against infections caused by medical care. As frontline defenders of patient safety, healthcare professionals must be equipped with the latest knowledge and best practices to prevent infections. The present study examines the role of health professional training in the prevention of healthcare-transmitted infections.

Materials and Methods: To find articles related to the topic, search in Persian and English databases such as PUBMED, SCOPUS, SID and GOOGLE SCHOLAR using the keywords from 2018 to 2024 was conducted.

Results: The results of implementing comprehensive health professional training programs have shown a significant reduction in infections associated with medical care. Trained staff demonstrated improved adherence to infection control protocols, leading to lower rates of healthcare-associated infections (HAIs). Enhanced knowledge of hand hygiene, sterilization techniques, and proper use of personal protective equipment (PPE) contributed to safer patient environments. Additionally, empowered staff to recognize and address infection risks proactively. Overall, targeted training proves essential in minimizing infection rates and improving patient outcomes. Through comprehensive training programs, staff can enhance their skills in infection control, understand new protocols, and stay informed about emerging pathogens. This proactive approach not only safeguards patients but also fosters a culture of safety and accountability within healthcare settings.

Conclusion: The basic role of health professional training in preventing infections caused by medical care cannot be overstated. Comprehensive training equips healthcare professionals with the necessary skills and knowledge to implement effective infection control measures, ultimately enhancing patient safety and care quality. By fostering a culture of continuous learning and vigilance, healthcare facilities can significantly reduce healthcare-associated infections. Investing in staff education is not just a regulatory requirement; it is a vital component of delivering safe, high-quality healthcare.

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The Impact of Zika Virus on Pregnancy and Perinatal Outcomes and Infection Control Strategies: A Systematic Review

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ARTICLEINFO

Posters

Keywords:
Zika Virus, Pregnancy, Perinatal outcomes, Infection control.

ABSTRACT

Introduction: The Zika virus (ZIKV) is recognized as a significant threat to maternal and fetal health. Primarily transmitted by the Aedes mosquito, Zika infection during pregnancy can lead to serious complications for both mother and child.

Materials and Methods: This systematic review examined articles from PubMed, Web of Science, and Google Scholar from 2016 to 2024. A total of 40 relevant articles were reviewed, focusing on the impact of the Zika virus on pregnancy and perinatal outcomes, as well as infection control strategies.

Results: Zika virus infection during pregnancy can lead to multiple complications: 1. Congenital Defects: The most significant complication is Zika syndrome, associated with severe fetal abnormalities such as microcephaly and neurodevelopmental issues. 2. Preterm Birth: Zika infection can increase the risk of preterm birth, leading to complications such as hemorrhage and infections associated with childbirth. 3. Neonatal Outcomes: Infants born to mothers infected with Zika during pregnancy may experience low birth weight, respiratory distress, and central nervous system complications, including seizures and intraventricular hemorrhage. These issues can have long-term impacts, potentially resulting in learning difficulties and developmental delays. Control Strategies: Preventive measures to control Zika infection include using insect repellents, creating mosquito-free environments, and public education on avoiding mosquito bites. Experimental vaccines and continuous mosquito population monitoring are also promising strategies for controlling the disease.

Conclusion: Effective management of Zika virus during pregnancy requires cross-sectoral collaboration and comprehensive preventive measures. Educating pregnant women and providing appropriate healthcare services are crucial for reducing neonatal and maternal complications.

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The Introduction of the Perinatal Patient Safety Officer: Enhancing Maternal and Neonatal Safety in Iran

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ARTICLEINFO

Posters

Keywords:
Perinatal safety, Patient safety officer, Maternal care, Neonatal care, Infection control, Iran, Healthcare, Patient outcomes

ABSTRACT

Introduction: Maternal and neonatal safety is a critical component of healthcare, especially in the perinatal period. In Iran, healthcare systems face significant challenges in maintaining high safety standards due to resource limitations, infection control issues, and the absence of specialized safety roles. The introduction of a dedicated Perinatal Patient Safety Officer (PPSO) aims to address these gaps by promoting a culture of safety and enhancing infection control practices in maternity and neonatal care settings. To evaluate the role of the Perinatal Patient Safety Officer in improving maternal and neonatal outcomes and reducing infection rates in Iranian healthcare institutions, with a focus on safety protocols and patient care practices.

Materials and Methods: This study proposes the implementation of the PPSO role across maternity wards in Iran. The PPSO's responsibilities will include auditing infection control protocols, overseeing safety training, coordinating multidisciplinary safety initiatives, and reviewing adverse events. The effectiveness of this role will be assessed through case studies, safety audits, and infection rate monitoring before and after the role is introduced.

Results: The expected outcomes of implementing the PPSO role include a reduction in maternal and neonatal infections, fewer adverse clinical events, and overall improvement in patient safety culture. This role is anticipated to bridge existing gaps in perinatal safety and align with international standards for maternal and neonatal care.

Conclusion: The introduction of the Perinatal Patient Safety Officer in Iranian hospitals has the potential to significantly enhance the quality of maternal and neonatal care. By focusing on infection control, safety protocols, and staff training, the PPSO can ensure safer outcomes for mothers and newborns, promoting a proactive approach to patient safety in Iran's healthcare system.

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The Relationship between Moral Injury and Adherence to Aseptic Technique among Health Care Providers in the Neurology Wards

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ARTICLEINFO

Posters

Keywords:
Moral injury, Adherence, Aseptic technique, Health care providers, Neurology.

ABSTRACT

Introduction: Patient care in medical practice involves ethical dilemmas, such as moral injury. Neurology wards face these challenges as practitioners must provide high-quality care while adhering to institutional protocols. This study examines the connection between moral injury and adherence to aseptic techniques of health care providers in the neurology wards.

Materials and Methods: This correlational study was carried out from February to May 2024 at educational hospitals of Mashhad University of medical sciences. A total of 181 nurses working in internal wards, surgery, and critical care neurology were included in the study using a simple random sampling method. Data were collected using standard Moral Injury Symptom Scale-HP and researcher-made questionnaire adherence to aseptic techniques in the neurology department. Analyses were performed using descriptive statistics (percentage, frequency percentage, mean, and standard deviation) and analytical statistics (Pearson's correlation coefficient) with SPSS version 25 statistical software.

Results: 63.5% (n= 113) of the study subjects were female, and 70.7% (n= 128) of 181 people were nurses. The mean score of adherence to aseptic techniques in health care providers was 46.6 ± 1.3 (of 100). The result of Pearson's correlation coefficient showed significant inverse relationships between all three aspects of shame/guilt (r= -0.63, p=0.001), condemnation (r= -0.68, p=0.001), and spirituality (r= -0.71, p=0.001) of moral injury with adherence to aseptic techniques in health care providers in neurology wards.

Conclusion: This study emphasizes the need for interventions to reduce moral injury among healthcare providers and improve adherence to aseptic techniques in neurology wards. Lack of adherence to proper catheterization practices leads to increased rates of catheter-associated urinary tract infections (CAUTI), highlighting a knowledge gap among healthcare providers. Barriers in hand hygiene practices also contribute to poor patient outcomes in surgical settings. Addressing these issues requires educational initiatives and systemic changes. Healthcare facilities can promote patient care and reduce moral injury by fostering a culture of safety and competence.

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The Role of Accreditation Standards in Improving Infection Control and Enhancing Patient Safety: A Systematic Review

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Posters

Keywords:
Accreditation standards,
Infection control,
Patient safety

ABSTRACT

Introduction: Hospital accreditation standards are recognized as one of the primary tools for improving the quality of healthcare services. These standards play a crucial role, particularly in enhancing infection control and patient safety. This study systematically reviews Persian articles published between 2020 and 2024 to examine the role of accreditation standards in improving infection control and increasing patient safety.

Materials and Methods: This systematic review involved searching Persian-language articles in reputable scientific databases such as SID, Magiran, and IranMedex, using keywords like "accreditation standards," "infection control," and "patient safety." Articles published from 2020 onward that discussed the impact of accreditation standards on improving patient safety and infection control were included in the study.

Results: Of the articles reviewed, 15 met the inclusion criteria. Results showed that implementing accreditation standards significantly reduces hospital-acquired infections and improves patient safety. Some studies found that hospitals adhering to these standards consistently achieve better performance in infection control and reduce infection-related complications. Additionally, training staff according to these standards positively impacted reducing medical errors and improving patient safety.

Conclusion: Accreditation standards play a vital role in improving infection control and enhancing patient safety. Proper implementation of these standards, coupled with adequate staff training, can lead to improved hospital service quality and a reduction in hospital-acquired infections. This calls for greater attention from healthcare administrators to accreditation standards and strengthened oversight.

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The Role of Artificial Intelligence in Controlling Hospital-Acquired Infections in Intensive Care Units: Opportunities and Challenges

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ARTICLEINFO

Posters

Keywords:
Hospital infections, Artificial intelligence, Intensive care units, Challenges, Patient health

ABSTRACT

Introduction: Hospital infections are considered as a major health challenge, especially in intensive care units (ICU), a serious threat to the health of patients and treatment costs. Patients hospitalized in ICU are at high risk for healthcare-acquired infections due to the high prevalence of invasive procedures and devices, immunosuppression, co-morbidities, frailty and aging. Considering the high prevalence of these infections and the vulnerability of patients in special care units, the use of new technologies such as artificial intelligence can provide effective solutions to control and reduce these infections. The purpose of this article is to investigate the application of artificial intelligence in the control of hospital infections and to identify the challenges in this field.

Materials and Methods: This review study has been done by using existing literature reviews and clinical data analysis to identify the patterns of hospital infections and examine the efficiency and challenges of using artificial intelligence in improving prevention protocols and identifying patients at risk.

Results: Text The findings show that AI with the ability to analyze big data can identify patterns of hospital infections and identify patients at risk in time. Also, it is effective in improving prevention protocols and can identify optimal times to prescribe antibiotics and make treatment decisions. In addition, AI plays a role in monitoring the interactions of medical staff and predicting the needs of hospital resources. This technology can play a significant role in improving clinical results, reducing the duration of hospitalization, and improving the overall quality of health services. More research is needed to fully exploit the potential of AI and to solve existing challenges, including data privacy issues, implementation costs, and the need to train employees in the use of these technologies.

Conclusions: AI has great potential to reduce hospital infections, especially in special wards. However, challenges such as lack of employee commitment to technology, low technological literacy, and data privacy issues can hinder rapid adoption of this technology. Therefore, the need to train and empower employees and

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The Role of Mosques in Kerman City in the Covid 19 Epidemic in 2019

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ARTICLEINFO

Posters

Keywords:
Mosques, Covid-19, Pandemic

ABSTRACT

Introduction: The coronavirus disease was a biological hazard and a slow-onset disaster that deeply affected religious communities. Covid-19 spreads mostly through droplets and in small and closed spaces with poor ventilation, crowded places like mosques. Therefore, this research was conducted with the aim of investigating the role of mosques in Kerman city in the epidemic of Covid-19 in 2019.

Materials and Methods: This research was applied in terms of objective and correlational in terms of descriptive method. The statistical population of this research includes the worshipers of mosques in Kerman city. Due to the unlimited statistical population and the application of quarantine conditions, the sample size was determined using the Morgan 484 Nefert table, and due to the researcher's lack of access to and the small presence of people and duplicate samples in the mosque, 79 questionnaires were distributed and collected using the available cluster sampling method. The standard questionnaire of Hosseini et al. (2015) was used to measure the attitude and practice of pilgrimage, and the researcher-made questionnaire with a reliability of $\alpha = 0.70$ was used to measure whether or not to go to mosques during the Corona virus.

Results: Many mosques were closed to prevent the rapid transmission of covid-19. However, some resisted those orders and scientific warnings were contrary to the opinion of scholars and carried the risk of virus transmission. In many countries, prayer Congregations in mosques were stopped due to public health concerns, but in the meantime, some believed that mosques could be open and worship continued while following the health protocols announced by the government, and closing mosques is not the only way to prevent the spread of the virus.Many believe that mosques, as the main community-oriented religious organization, can play an important role in managing the covid-19 pandemic. Understanding the different roles of mosques in the management of covid-19 and finding ways to promote the participation of this important community-oriented and people-oriented organization in the management Disasters are a necessity that must be favored by scientific models.

Conclusion: Due to quick access and strong local networks, mosques can play an essential role in risk.

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The Role of Needle-Free Injections in Subcutaneous Injections for Enhanced Infection Control

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ARTICLEINFO

Posters

Keywords:
Injections, Side effects, Infection control, Free needle injection

ABSTRACT

Introduction: This article does not have a Persian example, and since it is a review article, it was tried to use English sources.

Materials and Methods: This systematic review was conducted by searching scientific articles in valid databases such as PubMed, Scopus, SID, and Google Scholar. using the technology of needleless injections by syringe pumps "with high pressure through the pores of the skin" Effectiveness of Needle-Free Injections in Infection Control: Studies have shown that needle-free injection systems can be as effective as traditional needle injections in delivering medications subcutaneously while providing additional benefits in infection control. The ability to maintain a sterile and closed system throughout the injection process contributes to a reduced risk of infections associated with subcutaneous injections.

Results: Benefits of Needle-Free Injections in Infection Control: 1. Reduced Risk of Needlestick Injuries: Needle-free injection devices eliminate the need for needles, significantly reducing the risk of needlestick injuries among healthcare providers. This, in turn, minimizes the potential transmission of bloodborne pathogens and enhances the safety of healthcare settings. 2. Decreased Cross-Contamination: By removing the risk of needle reuse or improper disposal, needle-free injections help in reducing the likelihood of cross-contamination between patients and healthcare personnel. 3. Improved Sterility: Needle-free injection systems offer a closed and sterile delivery mechanism, decreasing the chances of introducing pathogens into the injection site and lowering the risk of infection. 4. Enhanced Compliance with Infection Control Protocols: The user-friendly nature of needle-free devices promotes adherence to infection control protocols, ensuring that proper procedures are consistently followed during subcutaneous injections.

Conclusion: An integrating needle-free injection device into subcutaneous injection practices represents a valuable step towards enhancing infection control measures in healthcare settings. By mitigating the risk of needlestick injuries, reducing cross-contamination, and promoting adherence to sterile protocols, needle-free injections contribute to a safer and more efficient environment

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The Role of New Technologies in the Prevention of Hospital Infections

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ARTICLEINFO

Posters

Keywords:
Technology, Prevention, Hospital infections

ABSTRACT

Introduction: In recent years, the rise of new technologies has transformed the landscape of healthcare, particularly in preventing hospital infections. From advanced sterilization methods to real-time monitoring systems, these innovations play a crucial role in safeguarding patient health. This article explores the impact of technologies such as artificial intelligence, robotics, and smart devices in enhancing infection control protocols and improving overall patient outcomes.

Materials and Methods: To find articles related to the topic, search in Persian and English databases such as PUBMED, SCOPUS, SID and GOOGLE SCHOLAR using the keywords from 2018 to 2024 was conducted

Results: The integration of new technologies in hospital settings has yielded promising results in the fight against infections. Key findings include: 1. Reduced Infection Rates: Implementation of advanced sterilization techniques and UV light disinfection has led to a significant decrease in hospital-acquired infections, with some studies reporting reductions of up to 50%. 2. Enhanced Monitoring: Real-time data analytics and AI-powered predictive tools have improved surveillance capabilities, allowing for early detection of infection outbreaks and timely interventions. 3. Automated Cleaning: The use of robotic cleaning systems has increased the efficiency and thoroughness of disinfection processes; ensuring high-risk areas are consistently sanitized. 4. Wearable Technology: Wearable devices for healthcare workers have facilitated better compliance with hygiene protocols, further decreasing the transmission of pathogens. 5. Telehealth Advantages: Telemedicine technologies have minimized in-person visits, thereby reducing the risk of cross-contamination between patients in healthcare settings.

Conclusion: The role of new technologies in preventing hospital infections is not only significant but transformative.These technologies not only streamline processes but also empower healthcare professionals to make informed decisions that protect both patients and staff. Embracing these advancements is essential for building a safer and healthier future in healthcare.

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The Role of Prenatal Anemia in Maternal Nosocomial Infection during and after Childbirth, A Systematic Review and Meta-analysis Study

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ARTICLEINFO

Posters

Key words:

ABSTRACT

Introduction: Iron deficiency anemia is the most common cause of anemia during pregnancy and is associated with adverse maternal and neonatal outcomes. This meta-analysis was done to determine the role of prenatal anemia on the risk of maternal nosocomial infection during and after delivery.

Materials and Methods: A systematic review was performed, analyzing studies that were done on the prevalence of prenatal anemia and its relationship with nosocomial infections. Data were extracted using a widespread literature search across various databases, including PubMed, EMBASE, and Scopus, from 2001 to June 2023, directing on maternal characteristics, infection rates and relevant outcomes. The risk of bias in these studies was assessed with the Newcastle-Ottawa Quality Assessment (NOS) tool. Statistical analyses were performed to determine the odds ratios (OR) for infection risk in anemic versus non-anemic mothers.

Results: The eligible studies involving 1012 mothers. Prenatal anemia significantly increased the risk of nosocomial infections, with an odds ratio of 1.686 (95% CI: 1.217-2.298) compared to non-anemic women. Other factors such as gestational age, delivery type (caesarean section), and duration of hospitalization were identified as contributing factors that increase the risk. It is worth-noting that after childbirth, anemia worsens following postpartum hemorrhage and reduces the mother's immunity, leading to more susceptibility to infections.

Conclusion: The study addresses anemia as an important preventable factor in maternal health strategies, shows the vital need for its screening and treatment during pregnancy to reduce the risk of nosocomial infections during and after the childbirth and highlights the multifactorial nature of risk factors. Advanced nutritional and prenatal care interventions are essential to prevent anemia and infection in pregnant mothers.

Keywords: Prenatal, Anemia, Nosocomial infection, Childbirth, Systematic review, Meta-analysis

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Tracking Antibiotic Resistance Trends in Central Iran(isfahan) Amidst the Covid-19 Pandemic from 2021 to 2023: A Comprehensive Epidemiological Study

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ARTICLEINFO

Posters

Keywords:
Antibiotic resistance, COVID-19 pandemic, *Pseudomonas aeruginosa*

ABSTRACT

Introduction: The emergence of coronavirus disease in 2019 appears to be having an impact on antibiotic resistance patterns. Specific circumstances during the COVID-19 era may have played a role in the spread of antimicrobial resistance (AMR). This study aimed to look at the changes in antimicrobial resistance patterns of Pseudomonas aeruginosa, *Klebsiella pneumoniae*, and *Acinetobacter baumanni* at Al-Zahra Hospital.

Materials and Methods: From March 2021 to January 2023, a total of 3651 clinical samples were collected from patients hospitalized at Isfahan's Al-Zahra Hospital. The Clinical and Laboratory Standards Institute (CLSI) recommended procedures for detecting gram-negative bacteria and assessing antibiotic susceptibility were used. We divided the information into three years.

Results: Highest resistance rates were seen in *Acinetobacter baumannii* to Ciprofloxacin (98.0%) and Ampicillin-Sulbactam (97.0%). For P. aeruginosa the resistance rate for ceftazidime (36.1), Levofloxacin (37.8) and Meropenem (47.1) dropped seriously in 2022.

Conclusion: During the second year of the pandemic in central Iran, all three species studied showed rising rates of antimicrobial resistance (AMR). This can be attributable to two peaks within Iran on May 6th, 2021 and August 27th, 2021. The results of this study show that *P. aeruginosa*, *K. pneumoniae*, and *A. baumannii* bacteria in central Iran have a higher level of antibiotic resistance than previously studied strains before the pandemic.

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Updating and Strengthening the Infectious Disease Surveillance System

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ARTICLEINFO

Posters

Keywords:
Syndromic care,
Infectious diseases,
Surveillance

ABSTRACT

Today, despite significant advancements in medical science regarding the prevention and treatment of infectious diseases and the promotion of public health, this group of diseases still poses one of the most important health problems worldwide due to their potential to create epidemics. To effectively manage and control these diseases, comprehensive and up-to-date information about their status is required, and the tool for providing this information is the disease surveillance system. The infectious disease surveillance system includes the collection, analysis, and interpretation of data related to infectious diseases for use in planning, implementing, and evaluating public health policies and interventions. This type of surveillance system is fraught with many deficiencies, including reporting that is significantly lower than expected, a shortage of reports, declining quality of the surveillance system, and a considerable gap between the onset of an outbreak and the response time from the system. The solution to this situation is to establish and incorporate a syndromic surveillance system alongside the routine surveillance system. The basis of this system is the patient's primary complaint, and instead of definitive diagnosis of cases, it relies on the collection and recording of key symptoms from the community. However, it is not a replacement for the existing disease surveillance system but rather a supportive and complementary system that should not hinder the routine disease surveillance efforts by the surveillance team. In this regard, nurses act as a "small monitoring system" that serves as the first line of detection for a biological agent that has spread in the population. Therefore, it is essential for all of them to be familiar with the basic concepts of epidemiology, early detection, and care.

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Using Modern Artificial Intelligence (AI) Technology to Infection Prevention and Control Procedures

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ARTICLEINFO

Posters

Keywords:
Artificial intelligence, Infection control, Hospital-acquired infection, Infection prevention, Innovative technologies

ABSTRACT

Introduction: Hospital-acquired infections have always been one of the major healthcare problems in the world, leading to increased treatment costs, prolonged hospital stays, and the deaths of many patients. The emergence of new infectious diseases, the increase in resistance to treatment methods and drugs, has made the use of innovative approaches in infection control more necessary. This article introduces the application of various types of artificial intelligence for the prevention and improvement of infection control.

Materials and Methods: In this review study, articles in English that addressed the role of innovative technologies and artificial intelligence in infection control were evaluated using the keywords artificial intelligence, AI, Infection Prevention, innovative technology, and infection control, within the time frame of 2020 to 2024, and from Scopus, PubMed, and Google Scholar.

Results: A review of studies indicates that various modern technologies such as IoT and Wireless, artificial intelligence (AI), information and communications technology (ICT), mobile applications, and E-learning have been able to play a significant role in the healthcare system. Among these technologies, artificial intelligence has been used in detecting disease transmission events during outbreaks, predicting high-risk patients, designing applications for hand hygiene behavior change through machine learning (ML), predicting the risk of hospital-acquired Clostridioides difficile infection (CDI) through ML applications, using AI-based simulations in infection prevention and control (IPC) educational programs to maintain patient safety, and facilitating the production of Healthmap applications during times of large data volumes in disease epidemics.

Conclusion: In recent studies, despite the challenges and concerns regarding some inefficiencies and ethical and privacy considerations for patients, the use of artificial intelligence (AI) in the healthcare system has yielded positive and promising results. This innovative technology can play a key role, especially in the unresolved areas of healthcare. Therefore, AI creates this glimmer of hope that health experts, especially nurses who are on the front lines dealing with patients and health issues, can use it to enhance the quality of care and patient safety in healthcare settings.