

A Case Report of a Successful Allergen Immunotherapy with *Candida Albicans* in Patient with Sever Atopic Dermatitis Sensitive to *Candida Albicans*

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ARTICLE INFO	ABSTRACT
<p><i>Article type:</i> Case Report</p> <hr/> <p><i>Article History:</i> Received: 23-Dec-2018 Accepted: 04-Feb-2019</p> <hr/> <p><i>Key words:</i> Atopic dermatitis Candida Allergens Subcutaneous immunotherapy Skin disease</p>	<p>Introduction: Atopic dermatitis (AD) is an inflammatory, chronic, relapsing, itchy skin disease with an immunologic basis. This disease is associated with itchy skin lesions (pruritus), dry skin (xerosis) and plaques of eczema. The role of aeroallergens, such as house dust mite (HDM) and food allergens has been proven to exacerbate skin eczema lesions. Alongside drugs such as corticosteroids, topical emollients, antihistamines, tacrolimus, and immune suppressants, phototherapy and subcutaneous immunotherapy (SCIT) also done. SCIT is mostly using for sensitization to mite allergens.</p> <p>Case Report: We present a 30 y/o Iranian woman with severe atopic dermatitis and sensitization to <i>Candida Albicans</i> allergens. We initiated SCIT with candida allergen and the patient had obvious improvements in her signs and symptoms 3 months after starting SCIT.</p> <p>Conclusion: Although subcutaneous immunotherapy was only approved for mite sensitization in atopic dermatitis, More attention would be paid to this field by further investigation for other aeroallergen sensitization .</p>
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Introduction

Atopic dermatitis (AD) is an inflammatory, chronic, relapsing, itchy skin disease with an immunologic basis. About 20% of children and 1-3% of adults are affected, and 40-60% of children continue to become an adult form of the disease. In adulthood, atopic dermatitis is characterized by xerosis, severe pruritus, excoriation and lichenified plaques of eczema. The disease is more common in people with personal or family history of allergic diseases. The cause of this disease is multifactorial, but there are also

familial, genetic and environmental factors involved. The role of aeroallergens, such as house dust mite (HDM) and food allergens, has been proven to exacerbate skin eczema lesions (1-3). Different methods for controlling or treating a disease are recommended, such as topical emollients, topical and oral corticosteroids, tacrolimus, antihistamines, pro and prebiotics , herbal drugs, plus azathioprine and cyclosporine, but none of them did not completely successful (4) . The role of immunotherapy in IgE-dependent

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allergic diseases is well known, such as hypersensitivity to aeroallergens and venom hymenopteras. But to this day, immunotherapy in atopic dermatitis has been performed only for cases with mite sensitivity (5, 6).

Case

We present a 30 y/o Iranian woman who referred to our outpatient allergy clinic from a dermatologist for subcutaneous immunotherapy (SCIT) with a severe atopic dermatitis. She had a history of eczematous lesions on face, scalp, trunk and upper extremities from childhood. Her disease was diagnosed as atopic dermatitis and documented with skin biopsy from these lesions, since 15 years ago. She did not have any sign and symptoms of any other allergic disease like asthma and allergic rhinitis. She was treated with several drugs in these years such as topical emollients, topical and oral corticosteroids, tacrolimus, antihistamines, herbal drugs, plus azathioprine and cyclosporine, but none of them didn't recover her. When she came to our clinic, she stopped taking all medications except skin emollients and topical corticosteroids (Eucerin, mometasone for face and Eucerin, hydrocortisone for face / twice a day). In our clinic, we did the skin prick test and it showed sensitization to *Candida Albicans* (6*5 mm), Ash (5*3 mm), and *Dermatophagoides Farinae* (3*3 mm). We did not check *candida Albicans* specific IgE because of the patient financial condition. She had an objective SCORing Atopic Dermatitis

(SCORAD) 63.3 and a total SCORAD of 81.6. Phototherapy with narrow-spectrum UVB was suggested, but she refused to do that. We held all drugs that patient used except topical emollients. Because she was highly sensitized to *Candida Albicans*, we started subcutaneous specific immunotherapy with different concentrations *Candida Albicans* extract based on conventional immunotherapy protocol from the GREER Company (USA) in September 2015. The build-up phase initiated which consisted of two doses every week (20 doses) administration of increasing allergen dose (conventional protocol) and after that; we injected maintenance doses (once monthly). After three months of immunotherapy, the patient reported a dramatic improvement in her symptoms and three months later, she had an objective SCORAD of 16.5, and a total SCORAD of 15.8. She does not use any drug now and is continuing the treatment. Her signs and symptoms did not relapse. In addition, there was no adverse reaction during immunotherapy.

Discussion

There are two types of Atopic dermatitis (AD). In 80% of patients with atopic dermatitis, there is an IgE-dependent sensitivity to environmental allergens and foods (the extrinsic or allergic form) and about 20% of patients do not have IgE-dependent allergies and are independent to allergy and atopy (the intrinsic AD). There is currently no curative therapy for atopic



Figure 1. Score 14 based on the intensity of SCORAD (erythema:2, papulation:2, excoriation:3, lichenification:3, crust:2, dryness: 3) before the treatment



Figure 2. Score 3 based on intensity of SCORAD (erythema:0, population:0, excoriation:1, lichenification:1, crust:0, dryness:1) after the treatment

dermatitis. However, hydration of the skin and the improvement of its protective barrier, and the use of topical corticosteroids play a major role in the treatment. Also, in the second line of treatment, the use of topical calcineurin inhibitors (e.g., tacrolimus and pimecrolimus) can be helpful in cases of severe or resistant to corticosteroids. Immunotherapy changes the immune response in the early stages of the disease, thus in the extrinsic form of AD, it could be useful. To date, most of the immunotherapies for atopic dermatitis have been positive for mite sensitivity (7-10).

Candida yeasts are one of the mucous membranes normal flora. The prevalence of asymptomatic individuals is 3-65%. This can be influenced by various factors. The amount of *candida Albicans* in the skin of patients with atopic dermatitis is higher than that of normal people. Approximately 30% of patients with atopic dermatitis have positive skin test results for the *Candida Albicans* extracts, and several studies indicated that *candida Albicans* treatment in atopic dermatitis patients with oral and topical antifungal agents are effective in them, But no study was done with SCIT until today (11, 12).

Conclusion

As we described above, sensitization with food and aeroallergens is not rare in atopic dermatitis patients. In our case, she was sensitized with *candida Albicans* allergen and although subcutaneous immunotherapy had never done with *candida Albicans* allergen in atopic dermatitis, she had a dramatic improvement in her signs and symptoms and SCORAD scores after starting immunotherapy. Therefore, although subcutaneous immunotherapy was only approved for mite desensitization in atopic dermatitis, it should be considered and other clinical trials need to assess the benefit of other allergens exclusive of mite.

Conflicts of Interest

The authors have no conflicts of interest to declare.

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