Short Term Scientific Mission (STSM) Report

STSM details

Title	**Allergic skin diseases**
Participant	Dr. Malena Yordanova Gergovska, Bulgaria
Host	Dr. Irena Angelova-Fischer, Department of Dermatology, University Hospital Schleswig-Holstein, Germany
Period	12 – 11 November 2016

Background

Allergic skin diseases are the second most common work related health problem in Europe. Occupational skin diseases (OSD) represent more than 25 % of all occupational diseases. My research focuses on the connection between allergic skin diseases and the respective occupation. It is aimed at finding out causes for the development of hand eczema in order to make to improve prevention and treatment of the affected patients.

Dyshidrotic eczema is one of the most common skin conditions. It is a recurrent or chronic relapsing form of vesicular palmoplantar dermatitis. The etiology is not yet completely understood. The pathogenesis, however, is believed to be multifactorial. The condition seems to be connected with specific genetic factors. In most cases it is found to be an allergic response to different allergens in the environment and the occupation of the patient. Many sensibilizising substances may be likely to cause an allergic response, in most cases of pompholyx.

Skin patch testing is increasingly proven as a standard method for defining the diagnosis. Recent data demonstrate a connection between dyshidrotic eczema and different contact allergens.

Aim (purpose) of the STSM

I am a PhD student and the topic of my dissertation is “Contact allergic reactions in dyshidrotic eczema”. The aims of this STSM were to:

1. compare the database from our centre in Bulgaria with that of Germany, as well as to compare the prophylactic and therapeutic guidelines and measures applied for patients with dyshidrotic eczema
2. assess the frequency and importance of allergic contact pomfolyx / dyshidrotic eczema / in areas where cosmetics, hygiene products and occupational

factors play a predominant role and to compare the findings with the data of allergic reactions to metals and other allergens.

3. determine the diagnostic applicability of the skin patch testing as a standard method in specifying the exact etiologic cause and to analyze the results

Work carried out during the STSM

During my stay at the Department of Dermatology, University Hospital Schleswig-Holstein in Lübeck (Germany) I studied new specific techniques in skin testing which broadened my theoretical and practical knowledge about the incidence and the influence of allergens. The STSM hosted by Dr. Irena Angelova-Fisher greatly influenced my development as a dermatoallergologis. It enabled me to study the latest approaches in this very specific area and to exchange my experiences.

The STSM helped me to gather further evidence that allergic diseases are of serious social and economic importance. The incidence of allergic skin diseases is constantly increasing and it is expected that by 2020, every second person on the planet will suffer from an allergic disease. I compared our clinical data with the German data regarding the prevalence of allergic contact dermatitis and hand eczema in patients with different occupations and hobbies. I compared the guidelines for treatment of hand eczema and gained new knowledge regarding the different therapeutic regimens that could be applied. I was introduced to new topical and systemic medications which are successfully used for the treatment of hand eczema.

It was important to increase my knowledge about the fact that in many cases the dyshidrotic eczema is the first manifestation of atopic diathesis. About 50 % of patients with dyshidrotic eczema have reportedly had personal or familial atopic diathesis (eczema, asthma, hay fever, allergic sinusitis).

I have noticed that phototherapy, in particular PUVA, is very popular in Germany. It proves to be very effective in the treatment of dyshidrotic and chronic hand eczema and for disease control and maintaining remission. Narrowband UVB therapy is frequently used as well and shows to be equally efficacious as PUVA for the treatment of dyshidrotic and "dry" types of hand eczema. It can be used as an alternative to PUVA, with fewer adverse effects, for patients with chronic hand eczema.

During my visit, I studied prophylactic and therapeutic measures for the treatment of hand eczema and I would like to implement them in our practice. Dyshidrotic eczema ranks among the most common skin diseases as it is a type of eczema of unknown etiology, characterized by a pruritic palmoplantar vesicular eruption. Contact allergy is a common cause of dyshidrotic eczema, although the exact impact and the influence of contact allergens in different forms of dyshidrotic eczema remains unknown. Patch testing is used as a standard method to determine if a specific substance causes dyshidrotic eczema or not.

During my stay at the Dermatology Department in Lübeck, I performed patch tests using standard and specialized series which contained many allergens suspected to cause contact dermatitis in different patients. This deepened my knowledge in the exact analysis of patch test results which is in turn a key-factor for comprehensive diagnose. Furthermore, I assisted in preparing and conducting prick tests and gained detailed information about different allergens, their distribution and when they need to be tested.

I was on visiting rounds in the Department of Dermatology.

Main results obtained

I studied alternative treatment methods and new pharmaceuticals which have not yet been introduced to the Bulgarian market. The knowledge gained from that is very helpful for my dermatology practice. Some of the new substances are still in the process of registration and I am very glad to have learned how they work and how they could be prescribed in patients with severe hand eczema.

To prevent relapses of allergic contact dermatitis, it is important to eliminate known exacerbating factors, to diet and to wear protective clothes.

The STSM successfully deepened my knowledge about skin testing and the methodology and of patch and prick testing in particular. At the Department of Dermatology in Lübeck, various series with many different allergens are used to test patients. To investigate those series in detail and to gain comprehensive knowledge about the substance of the allergen has been of great importance to me as a dermatoallergologist; it enables me to do more and different patch testing in my patients which is very important for the diagnostic work of allergic contact dermatitis. Patients should be more patch tested, especially patients with long-standing and severe forms of the disease.

The interpretation of patch test results requires considerable experience as sometimes the results can be inconclusive or misleading. I was also well trained to do differentiate allergic reactions from irritant reactions.

I studied how to perform the Repeated open application tests (ROATs) to be applied in cases when skin patch tests do not show any results but contact allergy is still suspected. In our practice we do not have much experience with this ROATs. However, it is suggest that ROATs should be performed more often, especially in patients in whom little is known or new allergens are suspected as being the cause of allergic contact dermatitis.

My STSM confirmed that hand eczema is the most common occupational skin disease. As in our country, in Germany the highest prevalence of occupational hand eczema is registered among cleaners. Other risk groups are hairdressers, fisher, medical and dental staff, farmers, masseurs, beauticians, kitchen workers. The higher incidence of hand eczema among those occupations is due to the frequent hand washing, contact with detergents, solvents, household dust and purely physical effects of atmospheric factors in certain professions on the skin of the hands. I learnt that contact allergy to metal implants is very frequent and affected patients have to be patch tested with series containing metal allergens.

The relationship between contact hand eczema and nickel allergy is deepening continuously. A higher frequency of nickel allergy in patients with hand eczema exists in Germany as well. Hypersensitisation to nickel is one of the commonest triggers for the development of dyshidrotic eczema and affects many people.

As in our country, skin patch tests have become a standard method for defining the diagnosis of contact dermatitis in Germany. I have increased my knowledge that there is a link between dyshidrotic eczema and different contact allergens, especially nickel. Nickel sulphate is a well-known sensitizer in the European Baseline series. About 35 % of patch tested patients suffering from contact dermatitis in our country show a positive reaction to nickel. Findings in Germany are similar.

Moreover, I am now aware about the role of cosmetic s and what kind of allergens they might contain. Hence, patients should be tested with different specialized series

that include: cosmetics and hairdressing products, metals, acrylates, preservatives, plastics and adhesives; textile dyes, drugs for topical and systemic administration and many others.

For my practice as a dermatologist it was important deepen my knowledge about common occupational allergens: tires, nickel, epoxy resin, kalium bichromate, perfumes, preservatives and even minimal exposure to these allergens could cause skin changes in sensitized patients. Comparing the findings in Bulgarian patients to those in Germany, I found out that relapse of dyshidrotic eczema is often associated with exposure to sensitizing substances e.g. fragrance mix, nickel, PPD, peru balm, formaldehyde, parabens, thiuram mix and plants.

I was present at many medical consultations which greatly contributed to my experience by giving me a deep insight in precise diagnosis and treatment of adults and children with asthma, food and environmental allergies, atopic dermatitis (eczema), allergic and non-allergic rhinitis (hay fever), anaphylaxis, contact dermatitis, sinusitis, angioedema (swelling), urticaria (hives), common variable immunodeficiency disorder, and adverse reactions to medications. During the examination patients with allergic or immunologic disorder were diagnosed and it was offered a broad range of treatment options from medications to immunotherapy and prevention. The opportunity to attend these examinations helped to upgrade my knowledge not only in the field of dermatology. It studied a lot about specifics of conducting immunotherapy / allergy shots as well as the treatment of urticaria, atopic dermatitis, rosacea using different therapeutic regimens.

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Future collaboration with the host institution

As we are currently updating the National Guidelines on Prevention of hand eczema and creating an Educational Program for exposed patients, I will surely implement the knowledge acquired during my STSM at the University Hospital Schleswig-Holstein and its Department of Dermatology – a centre with a well-established educational, prophylactic and therapeutic program for allergic contact dermatitis.

Foreseen publications/articles resulting from the STSM

To summarize the frequency of dyshidrotic eczema due to contact allergy in patients with atopic dermatitis.

Other comments

I obtained more experience in the field of dermatoallergology through studying new techniques of hand eczema assessment, patch testing and analysis of patch test results. The Department of Dermatology at the University Hospital Schleswig-Holstein and my host Dr. Irena Angelova-Fischer were the most suitable place for that. To incorporate this knowledge into my practice will be a great benefit for the patients in my country. During STSM, I was trained to render the highest quality of patient care and extend both the clinical and basic science boundaries of dermatoallergology.

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