

Doctoral Thesis Evaluation Report

Thesis title: “Current scenario of dermatophytosis in India”

Author: MD. Shyam Bhanushankar Verma

Research Supervisor: Prof. Jacek C. Szepietowski

Superficial dermatophytoses are skin infections caused by members of three genera: *Trichophyton*, *Microsporum*, and *Epidermophyton* dermatophytes which have the diverse ability to invade and proliferate in keratin-containing layers of the hair, skin, and nails. The prevalence of certain dermatophytes can vary based on geographic location, whereas others exist worldwide. Nowadays, superficial dermatophytoses belong to the group of the most common skin infections in India. Moreover, alarming data from India show that there is an increase in the prevalence of dermatophyte infections over the last 5 to 6 years. Therefore, the studies on the prevalence, predisposing factors, clinical presentation and an impact of itch associated with skin infection on patients' quality of life, which have been undertaken by Shyam Verma, are significant and worth performing. In addition, the results of these studies may facilitate an early diagnosis, lead to the improvement of treatment strategies and prevention of skin fungal infections spreading.

The doctoral thesis of Shyam Verma consists of three thematically-related publications: one editorial and two original papers. Of note, all papers have been published in peer-reviewed journals with total Impact Factor of 8.208. In all articles Shyam Verma is the first author.

The first publication presented for review is the editorial entitled “The great Indian epidemic of superficial dermatophytosis: an appraisal”, appeared in Indian Journal of Dermatology (Impact Factor 1.338). The article aimed to present the current epidemiological situation of increased incidence and prevalence of superficial dermatophytosis in India. Based on the review of available literature, as well as his own observations, the author has analyzed reasons that influence the increasing trend of dermatophytosis such as erratic use of topical and oral

antifungal agents, improper use of combination creams containing an antifungal and corticosteroid, which are available in India without prescription, wearing fashionable clothing inappropriate in a hot and humid climate, multiple family members affected and financial problems to buy drugs for all of them. From the clinical point of view, particularly interesting is the changing clinical presentation of superficial dermatophytosis. The author precisely describes large-sized lesions and erythrodermic variants of *tinea corporis*, genital tinea as the result of spreading *tinea cruris*, atypical lesions of “steroid modified tinea”, as well as *tinea faciei* and *tinea capitis* in adults, which is uncommon in Europe. Moreover, the author draws attention to increased frequency of trunk, face and scalp infections in children who contract the disease from affected multiple family members. The review of literature data performed by Shyam Verma indicates an etiological shift from *Trichophyton rubrum* to *Trichophyton mentagrophytes* in India. The author has also highlighted the inappropriate treatment of superficial dermatoses, mostly irrational, uncontrolled usage of topical corticosteroids and too short-term or erratic therapies with oral antifungals. To the best of my knowledge, this is the first such in-depth overview of the etiology, epidemiology, clinical manifestation and treatment of superficial dermatophytosis in India published in the literature. In my opinion, the article is very valuable and useful for all clinicians and researchers who would like to be familiar with various aspects of superficial dermatophytoses in India, which significantly differ from those typical for Western World population. This paper is an ideal introduction to the subsequent studies on itch related to dermatophytoses and its impact on Indian patients quality of life. The paper is also evidence that the author can review scientific literature and present his own clinical observations.

The second publication presented for review is the original paper entitled “Prevalence and clinical characteristics of itch in epidemic-like scenario of dermatophytoses in India: a cross-sectional study”, which appeared in Journal of European Academy of Dermatology and Venereology (Impact Factor 5.113). In that study, the author has evaluated the prevalence, intensity and clinical characteristics of itch in superficial dermatophytoses of 99 patients. Standard methods such as the Numerical Rating Scale (NRS) to assess the intensity of itch and 4-Item Itch Questionnaire to assess itch extend, intensity, frequency and sleep impairment were used. The quality of life impairment was assessed via Dermatology Life Quality Index (DLQI). It was found that 99% of patients reported itch in the last 3 days, and in the majority

of them itch was limited to skin lesions. The severe and very severe itch was reported in 74% of patients. The author concludes that itch is an important clinical feature of superficial fungal infections and is associated with a negative impact on sleep and carries a significant psychological burden. It is an innovative study because, so far, there are no such detailed studies concerning the clinical characteristic of itch associated with superficial dermatophytoses. The publication of the study in such a prestigious journal, namely JEADV, underlines the importance and relevance of the studied topic.

The third publication presented for review is the original paper entitled “The influence of superficial dermatophytoses epidemic in India on patients’ quality of life”, which appeared in *Advances of Dermatology and Allergology* (Impact Factor 1.757). The subject is interesting because the data on the well-being of patients with various dermatophytoses are very limited. The review of literature shows that apart from the study performed by Shyam Verma there is only one cross-sectional observational study on the influence of superficial dermatophytoses on the quality of life in Indian patients. Interestingly, two centers in India (Vadodara I Mumbai) took part in the study. The majority of patients suffered from a combination of *tinea corporis* and *tinea cruris*, followed by *tinea cruris* alone and *tinea corporis* alone. Shyam Verma found that a very large and extremely large effect on DLQI was reported by 26.3% of patients, moderate by 48.8%, whereas small by 29%. Moreover, the author revealed a significant correlation between the impairment of quality of life and the itch intensity. The author correctly discusses his results with other authors findings and notices the limitations of his study, mainly a relatively small number of patients and the lack of fungal culture results.

Both original studies prove that superficial dermatophytoses and itch associated with the disease negatively influence the patients’ quality of life and indicate that a holistic therapeutic approach should be considered in these patients. Bearing in mind that most data regarding superficial dermatophytoses are based on the studies performed among Caucasian population, I think that the studies on clinical presentation, itch and patients’ quality of life in India conducted by Shyam Verma are of great relevance and up to date. The methods used in all studies and statistical evaluation of the obtained results have already been reviewed by journals’ reviewers and I have no comments to them. I would like to underline the high linguistic quality of all published studies. It would be worth analyzing the relationship between itch of involved skin and dermatophyte species. Finally, I assess the doctoral thesis

of Shyam Verma very positively. The full implementation of the objective, the appropriate application of research methods and statistical analysis indicate that the author has an ability of good planning and conducting research studies, forming conclusions and correctly discuss the results of his studies.

In summary, based on the reviewed Doctoral Thesis of Shyam Verma, I conclude that all studies were conducted properly. In the light of the above, I consider that the Doctoral Thesis of S. Verma complies with the conditions set out in the Act on scientific degrees and scientific title, as well as on scientific degrees and scientific title in the field of art as defined by the Polish law art 13 ust. 1 from March 14th, 2003 with subsequent modifications (Dz. U. Nr 65, poz. 595, z późn. zm.). Therefore, I have the honor to submit to the High Council of Medical Sciences Discipline of the Piastów Śląskich Medical University of Wrocław the application for admission Shyam Verma to the further stages of the doctoral procedures. In my opinion, the author's research and clinical interest are consistent with most current problems of both clinical mycology and contemporary psychodermatology. I would also recommend rewarding the Doctoral Thesis of Shyam Verma for its novelty and significance for the prevention of superficial fungal infections spreading in India.

Yours faithfully,



Prof. dr. hab. Magdalena Maria Lange

Department of Dermatology, Venereology and Allergology

Medical University of Gdańsk