Diseases in Pigmented Skin: An Introduction

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The majority of the global population has non-Caucasian skin. In ethnic populations who live in hot climate zones, the skin appears colored; it is heavily pigmented or even black. The genetic background of such differences has been under-investigated; it now comes into focus following various international projects. The molecular genetics underlying the diversity of pigmentation in humans is complex and fascinating [1, 2]. In addition to the differences in skin, hair, and eye color, there are variations among ethnic groups in body mass, height, disease susceptibility, and also in their response to drugs.

Skin diseases arise in heavily pigmented skin to a large extent based on the environmental and climatic conditions in semi-urban and rural areas of hot climate zones, the savannas, forests, and lakes. If the average temperature increases by 2 °C, as is observed today in the southern hemisphere, the amount of precipitation is also reduced, resulting in extremely dry regions. Observations in the Sahel zone, p.e. in Somalia, Sudan, Chad, Niger, and Mauritania, indicate that changes of the frequency and duration of drought periods also cause changes in the socioeconomic and health conditions of their inhabitants. Changes related to the well-known greenhouse effect lead to further increase of the average global temperatures and to an increase of the rates of infections and infestations already common in the tropics by creating expanded habitats to pathogenic agents and favorable conditions for skin diseases.

Diseases developing in ethnic populations with pigmented ethnic skin include common dermatological entities such as contact dermatitis, atopic eczema, psoriasis, lichen, urticaria, bullous and various other immune dermatoses, scalp and hair disorders, etc., well described in white-skinned Caucasians. However, the prevalence, clinical picture, and course of these conditions may differ in patients with heavily pigmented skin, based on the geographic circumstances, the particular cultural and hygienic standards, and the genetic, nutritional, and other factors prevailing in their home countries. Needless to say, erythema as a visible marker of inflammation is masked in heavily pigmented or black skin. In addition, there are skin disorders common in the tropics that are being imported to developed countries by travelers and refugees such as deep fungal or sexual transmitted infections, cutaneous leishmaniasis, leprosy, schistosomiasis, onchocerciasis, filariasis, larva migrans, and other infestation. Thus, diagnosis and management often cause difficulties for the practicing physicians and health workers.

There is a dramatic increase of the number of tourists, businessmen, immigrants, and other individuals traveling around the world. Millions of tourists return to their home countries after having traveled in the rural tropics; around 3.4 million individuals with pigmented skin migrated into the EU only in 2013. An estimated number of 33.5 million live in the EU today but are not born in any of the EU countries [3]. An analysis of the complete data of thousands of diseased German travelers returning from Latin America, Africa, or Asia and several hundred diseased immigrants, originating from the same regions, revealed that the most frequent findings assessed in these groups were gastrointestinal illness with diarrhea as a leading symptom (38%), fever as a marker of disease (29%), and skin disorders (22%) [4]. In December 2015 the United Nations declared 2017 as the International Year of Sustainable Tourism for Development, to be a boost for economic growth. One should therefore expect that more of travel-related dermatoses will be seen in future by western physicians.

In addition, there are an increasing number of immigrants and refugees with pigmented or black skin from countries with socioeconomic problems moving across borders. Especially children are at risk to develop pyodermas and fungal, viral, or parasitic skin diseases; in a considerable number of cases, scabies is diagnosed [5]. Arthropod bites, cutaneous larva migrans, and skin or soft tissue infections

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were the most common dermatologic diagnoses to returning Canadian tourists and immigrants in Canada [6]. Pruritic, arthropod-reactive dermatitis, fever conditions of various severity and types are not rare. The influx of large immigrant populations on the demographic profile in western countries is considerable. In a recent study, eczematous dermatitis, alopecia, melasma, ringworm, scabies, HSV infections, keratosis pilaris, and skin xerosis were found significantly more frequent among immigrants than in an indigenous European population [7]. Around 5–10% of the visits in large skin departments in Europe are now assumed to be done by travelers and/or immigrants. Thus, tropical diseases and parasites from tropical and subtropical parts of the globe are now seen in developed countries of the northern hemisphere; rare diseases from the South are encountered in the North.

There is an increased need for all physicians to deal with these issues. Most of the individuals affected ask for and need medical services and require clear diagnosis and proper treatment. Especially the frequency of infections involving the skin is increasing due to intercontinental exchange with emerging markets in hot climate zones and traveling to remote areas for business, holidays, or pleasure. A growing number of people are in need for health promotion, mental health services, and fair policy planning [8].

This book is designed to improve awareness and contribute in aiding the international medical community to diagnose and register skin diseases in pigmented skin, understand any differences, highlight their particular reactive profiles, and provide information on their appearance, course, and treatment. The quality of health services and the number of physicians in countries of greatest need in hot climate zones are generally low, also due to an ongoing large-scale emigration [9]. In 2013 the American Medical Association identified 11,787 active physicians of sub-Saharan origin representing barely 1.3% of the 2013 US physician workforce but exceeding the total number of physicians reported by WHO in 34 sub-Saharan countries (n = 11,519) [10]. Rural health conditions and those of poverty define the spectrum of skin diseases in developing countries [11, 12], and disruption of sanitation during migration enforces the appearance of skin disease; a reemergence of migration-associated neglected infections is registered among asylum seekers [13]. The health workers in the West should be made familiar with the clinical presentation and characteristics of diseases in dark-skinned individuals and be encouraged to provide the medical services needed. Major clinical manifestations and schedules for management are presented in this book, as a basic guide to assist those who are likely inexperienced with such entities and facilitate management by physicians who are used to diagnose and treat dermatoses only in white Caucasian skin.

Several colleagues from around the world, most of those permanently based in hot climate zones or having collected long-term experiences in developing countries, have shared their particular knowledge and have contributed to enrich this volume with their personal expertise. We are deeply indebted to all coauthors and to the numerous centers, hospitals, and pioneer institutions which allowed the assessment of local patients. Lecturing in these regions and also participating in patient's management over the years in offices and hospitals [14], it has been possible to see and clinically document a series of skin diseases in highly pigmented and black-skinned patients. Some of these observations are shown for educational reasons in this volume. Hopefully, the numerous illustrations included will be helpful for better knowledge of the clinical presentations and better understanding of these conditions and their course in pigmented skin. All valuable contributions are thankfully recognized.

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