

Rating of skin problems among peacekeepers serving in the hot, dry and humid climate

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ABSTRACT

The aim of this study was to examine the incidence of skin problems in the population of Polish soldiers serving in the United Nations peace missions in Lebanon (hot, dry climate), and Cambodia (hot, humid climate). Epidemiological assessment was carried out among 1214 patients of Polish nationality treated in the outpatient clinic of the UNIFIL Hospital in Lebanon from June 1992 to July 2001, and 789 Polish patients treated in the local departments of the UNTAC health service in Cambodia from March 1992 to September 1993. The examination allowed to affirm that skin diseases pose an epidemiological problem in hot, dry as well as humid climate. Among Polish soldiers serving in Lebanon, dermatoses made up 13.2% of all illnesses, while in Cambodia 19.7% (ambulant treatment). The research showed that the most frequent skin problem treated in analyzed period were allergic diseases in dry climate in the Middle East (44% of all dermatological cases), and mycoses in humid climate in South-Eastern Asia (78% of all treated skin affections). High incidence of dermatoses among Polish peacekeepers in the tropics dictates a necessity of appropriate health and safety qualifications of candidates on active duty in subtropical and tropical regions, and right organization of dermatological health assistance in the mission area.

Keywords:

Skin diseases, Tropical climate, Lebanon, Cambodia

INTRODUCTION

Risk factors influencing morbidity and morbidity by skin diseases are mostly chemical agents (impact of chemical substances – e.g. oil and grease)¹, physical factors (microinjuries, high temperature and humidity of air, the amount of rainfall)², biological factors (contact with infected material – bacteria, viruses, fungi, parasites)³, congenital and acquired disorders of immunological resistance, metabolic diseases, disorders of the peripheral circulation, therapy including antibiotics, steroids and immunosuppressive agents⁴, inappropriate clothes and shoes in the hot climate (made of artificial materials)⁵, poor socio-economical conditions, low hygienic level.⁶

High temperature and humidity of air, impact of chemical substances on the posts, inappropriate clothing and low level of per-

sonal hygiene influence the incidence of skin diseases among soldiers in active military service in peace missions.⁷ It is imperative for soldiers to follow the military guidance on rightful wear of appropriate uniforms. The individual equipment and battle dress must be suited to environmental conditions.⁸ It is important to remember that temperate climate differs from hot, dry climate (deserts and semi-deserts) and hot, humid climate (relative humidity above 70%, average pressure of water steam about 20hPa), and that is why uniforms should be varied for each climatic zone.⁹ The right choice of undergarment is a key matter. It is unacceptable to wear socks made of artificial materials, very tight and fitted underwear instead of wide and loose ones. Inobservance of these basic rules concerning clothing results in various dermatoses, mainly mycoses, pyodermas and allergies.¹⁰

The aim of this article is to assess the incidence of skin problems among the population of Polish soldiers, deployed to the United Nations peace missions in Lebanon (hot, dry climate) and Cambodia (hot, humid climate) with frequency of occurrence and structure of skin diseases.

MATERIALS & METHODS

The epidemiological analysis of skin diseases among personnel of the United Nations Interim Force in Lebanon was based on the medical documentation, hospital records, cards of ambulant treatment, archival and current documentation of the UNIFIL Hospital. Medical documentation from the period June 1992 – July 2001 came from 1214 patients of Polish nationality, treated in outpatient clinic of UNIFIL Hospital, and was used to do the research. The examined population was chosen among over 38 thousand military personnel of particular contingents serving in UNIFIL from 1992 to 2001, where there were about 7900 Polish personnel supervised medically by UNIFIL Hospital in Lebanon.

The epidemiological analysis of dermatoses diagnosed among the population of UN Forces in Cambodia (UNTAC) was based on data recorded in cards of ambulant treatment and the documentation of post-deployment medical screenings in soldier's native country. The research was prepared on records from the period March 1992 – September 1993, coming from 789 patients of Polish nationality. The records were chosen from 1254 Polish soldiers out of 22 thousand coalition personnel serving in Cambodia.

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RESULTS

Skin diseases were categorized in the main reasons for morbidity among the personnel of UN Forces in Lebanon. Dermatoses made up 13.2% of all illnesses treated in the population of Polish soldiers in the analyzed period (fourth reason, with preceding reasons the respiratory system diseases, gastrointestinal tract diseases, and traumas) (Figure 1).

From the group of skin diseases diagnosed in the population of Polish nationality, allergic diseases were a prime occurrence making up 44.4% of all dermatoses (Table 1). Among allergic diseases the most dominant was eczema. Other allergic diseases treated during analyzed period were photodermatoses, drug-induced reactions, Quincke's oedema and acute urticaria. Mycoses, which made up 16.2% of all skin diseases, were the second, frequently diagnosed group of dermatoses in the Polish population. Tinea inguinalis, tinea pedum and pityriasis versicolor were the most dominating mycotic problems. Viral diseases made up 11.9% of all dermatoses and the most frequent viral conditions were herpes simplex and verrucae vulgares. Another group were pyodermas (10.0% of all skin diseases). Among them the most dominating were furuncle and folliculitis. Tumours made up 11.9% of all skin diseases, mainly atheroma and lipoma. Malignant neoplasms of skin, such as malignant melanoma, basal cell carcinoma or spinocellular carcinoma didn't appear in that period. Other skin diseases occurred sporadically, e.g. psoriasis, juvenile acne. Sun burns developed rarely due to the common use of creams with filter of high coefficient of protection against UVA/UVB radiation. A few cases of bites caused by centipedes and scorpions occurred at that time. Among skin parasitic diseases one case of scabies was registered.

The examined population was analyzed with reference to age. The incidence of skin diseases in individual age groups was evenly dispersed and proportional to a number of examined patients in the given age categories.

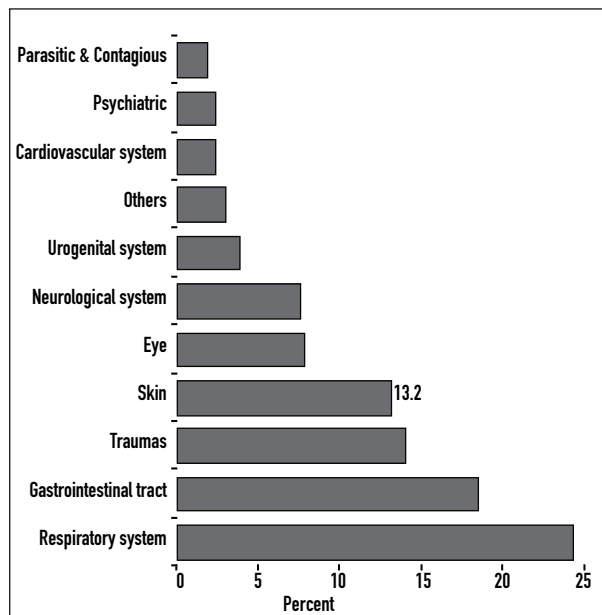


Figure 1. The incidence of diseases in the population of Polish peacekeepers (n = 1214) treated in the outpatient clinic of the UNIFIL Hospital from June 1992 to July 2001
Source: UNIFIL. Own studies

TABLE 1. Skin diseases in the population of Polish peacekeepers (n = 160) treated in the outpatient clinic of the UNIFIL Hospital from June 1992 to July 2001

Types of dermatoses	Number of cases	Structure rate [%]
Allergic Diseases	71	44.4
Mycoses	26	16.2
Viral diseases	19	11.9
Tumours	19	11.9
Pyodermas	16	10.0
Other	9	5.6
Total	160	100.0

Source: UNIFIL. Own studies

Skin diseases was the most prevalent epidemiological problem in the population of Polish military personnel of UN Forces in Cambodia. Dermatoses were a main reason for admissions of patients treated in local departments of the UNTAC health service (19.7% of all cases) in the analyzed period, ahead of gastrointestinal tract, eye, and parasitic diseases (Figure 2).

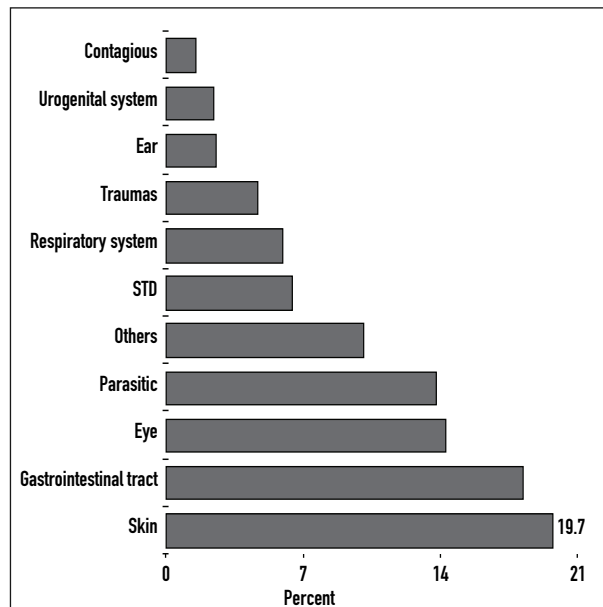


Figure 2. The incidence of diseases in the population of Polish peacekeepers (n = 789) treated in the local departments of the UNTAC health service from March 1992 to September 1993
Source: UNTAC. Own studies

Among skin diseases mycoses were dominating, making up 78.5% of all dermatoses (Table 2). The most frequently treated mycoses were tinea inguinalis, tinea pedum, tinea glabrosa and pityriasis versicolor. Allergic diseases made up 8.6% of all dermatoses. Eczema occurred was the most frequent diagnosis. Another group were pyodermas (7,9% of all skin diseases). Among them, furuncle and folliculitis were dominating. Other skin diseases that oc-

curring in the analysed period, were mainly malaria cases. Similarly, as in Lebanon, because preventive care program was common against UVA/UVB radiation, sun burns occurred sporadically. A few cases of parasitic diseases were registered (scabies, pediculosis), and also bites (two by scorpions and one by cobra).

The examined population of Polish nationality was analyzed on the basis of age groups. The highest incidence of skin diseases was found between 21-25 years.

TABLE 2. Structure of skin diseases in the population of Polish peacekeepers (n = 789) treated in the local departments of the UNTAC health service from March 1992 to September 1993

Types of dermatoses	Number of cases	Structure rate [%]
Mycoses	218	78.5
Allergic diseases	24	8.6
Pyodermas	22	7.9
Other	14	5.0
Total	278	100.0

Source: UNTAC. Own studies

DISCUSSION

There are many different factors which influence the development of skin diseases in the hot climate. The most important components are temperature and humidity of air, personal hygiene, social and life conditions as well as nutrition.^{11,12} In tropical circumstances, even harmless scratch of epidermis, which would not develop any health problem in temperate climate, can escalate changes.¹³ Skin diseases, in tropical zone belong to the most frequent illnesses which demand medical intervention.¹⁴ Research carried out among participants of UN peace mission in Cambodia, determined that dermatoses located around groins and feet were dominating, which was exacerbated by wear of inappropriate undergarment and shoes in the tropical climate.¹⁵ On the other hand, among participants of UN peace mission in Lebanon, allergic diseases came to the fore. The main reasons for them were contact with chemical allergens (oil, grease), solar radiation, and insect bites.⁸ A correlation between incidence of skin diseases and personal hygiene status was affirmed. Although peacekeepers were provided available hygiene agents (soap, toothpaste, laundry detergent) and change of underwear and bed linen, as well as conditions for washing clothes in a close range (washing machines, laundry rooms), hygiene was understood by every member of the mission in a very individual way. UN peacekeepers used the same uniforms in the Middle East and South-Eastern Asia (Indiana bush type uniform and suede shoes with rubber sole) which turned out to be useful in dry tropic only. The incidence of skin diseases was not dependent on living conditions, or food sanitation and preparation. Members of the mission had similar accommodation (container system), similar access to sanitary devices, medical assistance and basic rules of prophylaxis (sun-screen lotions with filter, insect repellents). Food safety was also guaranteed. Peacekeepers had regular food in dining facilities which was con-

trolled and examined according to the army standards. Potable water came from controlled sources, and was decontaminated regularly by chlorination and examined by hygiene services of the mission.¹⁶ Unlimited supply of bottled water was also available. Soldiers of UN peace mission in Lebanon and Cambodia performed their mandatory tasks based on similar procedures and directives. They were deployed for fixed mandatory rotations for 6 to 12 months. Health reasons (mainly traumas) or disciplinary actions were grounds for early dismissal. Medical evacuations were not reported in groups of patients with dermatoses. In some cases, among members of the mission, skin diseases posed lack of physical and mental comfort which impacted the proper performance of duties.

The problem of skin diseases, before departure to the tropics, among the candidates who will work in the hot climate is significant, especially with Europeans, whose dermatological conditions in temperate climate can escalate seriously in tropical environment.¹³ Owing to that fact, the right selection and defining contraindications for the work in this climate is essential.¹⁷ The strongest contraindications for a work in the tropics and subtropics are chronic inflammatory conditions of skin, such as psoriasis, ichthyosis, sclerodermia, bullous diseases, extensive eczema, extensive red sudamina, anhidrosis, extensive albinism, and active process of mycoses.¹⁸ Pre-existing mycotic changes, in temperate climate, even mild states, such as tinea interdigitalis pedum, may get inflamed in the tropic climate. It is likely that pyodermas which are very difficult to cure and heal slowly, will pose the same presentation. It must be considered that condition of allergic illnesses may get worse.⁵ Medical observations prove that patients with family history of allergies, who were never sick in the temperate climate, are falling ill with allergies in the countries located in the hot ambience.¹⁸

Unfortunately, it is difficult to establish who among peacekeepers had preexisting skin conditions, and who have suffered from dermatoses for the first time in tropical environment. Two factors are involved here: primarily, the candidates for military deployment consciously conceal their dermatological problems in order to avoid health disqualification and secondly, health status examination by medical boards is too superficial.¹⁸ Given the fact that every 6th case of morbidity among the staff of UN peace mission in Lebanon and every 5th in Cambodia were connected with skin problems, this group of diseases was and is very important in an epidemiological and economical point of view. Considering qualifications for duty abroad, health contraindications for departure to the area of the hot climate and the organization of health care specialists for the mission, would significantly decrease the incidence of dermatoses among Polish soldiers who support peace and stabilization missions of international organizations in the world.

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CONFLICT OF INTEREST:

None declared.

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