

Dermatological conditions in winter in Primary Health Care on Operation Resolute (Bosnia)

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SUMMARY: The distribution of dermatological conditions has been studied in a total of 1822 consultations with British troops in a primary health care setting on Operation Resolute (Bosnia) between 1 January and 4 March 1996. Approximately one in eight (12%) of the consultations were for skin conditions; eczema was the most common complaint, but, taken as a whole, infections due to virus (excluding warts), fungus and bacteria made up 30%. The overall distribution of diseases was similar to that seen in British general practice.

Introduction

Dermatological disease has been a universal problem in military campaigns throughout history, yet published British epidemiological studies made under operational conditions are sparse (1,2). In recent history, skin conditions were commonly encountered in British hospitals during the Gulf War (3), and it was shown that many consultations were for dermatological problems in the primary health care setting at Divulje Barracks, in Split, Croatia, during the first ten weeks of Operation Resolute (4). This was the name given to the campaign in which about 10,000 British troops participated as part of an international NATO force (IFOR) to enforce the peace agreement signed by the three warring factions of the Former Republic of Yugoslavia at Dayton on 14 December 1995. Split was the headquarters of the support element for 3 UK Division.

This paper extends the work done at Divulje Barracks, Split (4), by presenting the spectrum of dermatological conditions seen in primary health care.

Methods

A manual record was made of every consultation resulting from a skin complaint between 1 January and 4 March 1996. All the case notes were extracted from the files at the end of the period of study and a note was made of each presenting complaint. A proportion of these consultations were for follow-up and only those for the primary diagnosis have been recorded in the distribution table. Where doubt about diagnosis was present, the opinion of a consultant dermatologist had been sought.

Some patients chose to be seen by nursing staff. In perusing these notes nursing staff frequently recorded diagnoses of 'dry skin' or 'rashes'. These diagnoses have been classified as non-specific rashes in the table; it was possible that they could have been diagnosed more specifically had they been seen by a doctor.

As discussed previously (4), the practice population

was variable and could only be estimated as about 1,750; consequently prevalence and incidence rates have not been calculated.

Results

A total of 1,822 patients was seen and 211 (12%) were for dermatological complaints. Notes were available for 173 consultations, and of these 141 were primary consultations and 32 for review. The case notes for the 38 cases which were no longer present in the files were presumed to have been returned to the patients' parent units with the expiry of their deployment. It is assumed that the distribution of diagnoses in the returned notes would have been similar to that observed in the available notes.

Table 1 shows the distribution of diagnoses, and Figure 1 gives the relative proportions of the skin conditions. It can be seen that eczematous conditions were the most common single complaint (19%). Infections, however, made up 30% when considered as the sum of fungal (13%), bacterial (14%) and viral (excluding warts, 3%) conditions. Verrucae and warts, non-specific rashes and dry skin were approximately equally common (about 10% each).

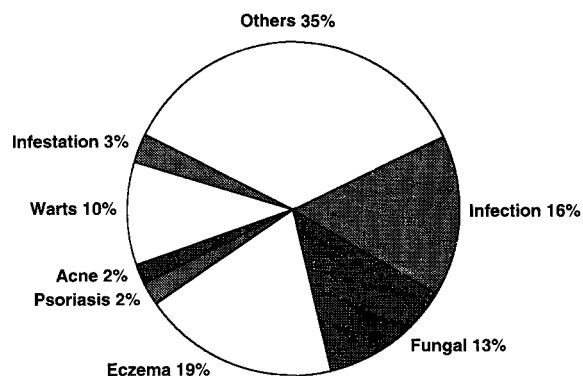


Fig 1. The Relative Proportions of Skin Conditions

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Table 1
The Distribution Of Skin Conditions Seen In Primary Health Care at Divulje Barracks, Split on Operation Resolute (Bosnia).

Condition	Number of cases
<i>Infections:</i>	
Cellulitis	2
Folliculitis	1
Impetigo	2
Subcutaneous tissue infection	10
Sycosis barbae	3
Herpes: Simplex	2
Complex	2
Genital warts	2
<i>Fungal:</i>	
Tinea: Cruris	2
Pedis	4
<i>Eczema:</i>	
Chemical dermatitis	1
Contact dermatitis	4
Atopic eczema	17
Erythroderma	1
Seborrhoeic dermatitis	4
<i>Psoriasis</i>	3
<i>Acne</i>	3
<i>Verruca/wart</i>	14
<i>Infestation:</i>	
Scabies	3
Lice	1
<i>Others:</i>	
Boil	2
Dry skin	11
Ecchymosis	1
Hyperkeratosis	2
Ichthyosis	1
Ingrowing toe nail	1
Insect bite reaction	3
Non-specific rash	14
Pigmented lesion	6
Sebaceous cyst	3
Sore lips	1
Telangiectasia	1
Ulcer	1
Urticaria	3
Total	141

Infestations were rare, only three cases of scabies were identified and it was probable that one of these was contracted in the UK (4), and there was one case of lice.

There were three cases of psoriasis (two of which were repatriated to the UK) and one case of ichthyosis vulgaris (which was also repatriated).

Discussion

Apocryphal and published (1,2) reports suggest that skin problems are common in British military campaigns throughout history and this is confirmed here, for patients with skin disease made up about one in eight consultations. This frequency compares favourably with the findings of another study (5), where the incidence of skin conditions in all the men of two companies of British troops in Bosnia-Herzegovina was studied in February 1996, and where it was found that 14% in one company and 21% in the other had skin diseases. War zones generally predispose to skin disease by virtue of, for example, their geographical locations, climatic conditions and exposure to sunlight, overcrowding, living arrangements and working conditions. The period studied here in Split, Croatia, was over midwinter, the weather was very cold, wet or snowy, and many troops lived in cramped conditions (sometimes under canvas or in closely packed barracks and portable hard accommodation units) with poor shower/bathing facilities, and were exposed to the elements during their working days. The small difference between the figures observed here and in the two companies in Bosnia Herzegovina could have been due to differences in the above factors, especially geographical or climatic. It must be noted, however, that the Bosnia study (5) included all troops in two companies, whereas here only patient-led consultations were involved, and the figure here would be lower as not all troops with skin conditions would be expected to consult their doctor.

In a study of American personnel during the Persian Gulf War (6), it was found that 13.9% of patient-led consultations were for dermatological conditions, and this is comparable with the present findings despite the obvious differences in climatic and geographical factors. In British general practice, there is a consultation rate for dermatological conditions of about one in ten (7), but the present population is skewed towards predominantly young males and, therefore, not strictly comparable.

The distribution of ailments was comparable to that seen in civilian general practice (7,8,9). Morbidity studies from general practice (7, 8) suggest that the number of skin consultations for the size of population assumed for the Split practice would have been expected to have been lower than actually observed. The differences have been compared with the χ -square test and are statistically significantly different ($p < 0.01$ for both studies). For example, in the age group 25-44 years (which is similar, but not identical, to the age range of the troops here), there were more cases of skin infection ($p < 0.05$), eczema ($p < 0.01$) and warts ($p < 0.01$) in this study compared with British general practice (7). The greater number of cases of infection and eczema would be consistent with the nature of the living and working conditions of the troops.

Eczema was the most common diagnosis, as it was

during the Gulf War (3) and is in civilian general practice (7,8). Here eczematous conditions (eczema, contact dermatitis, chemical dermatitis and seborrhoeic dermatitis) made up 19% of the dermatological consultations, and this agrees well with the American study in the Gulf War (10) where the prevalence of all forms of eczema was 18%. However, the frequency of eczema diagnoses could have been higher given that some of the rashes recorded as non-specific could have been dermatitis.

Simple infections, such as impetigo, infected sebaceous cysts and grazes, were common and infected dog bites were not unusual in this area where dogs ran wild.

The local region in Croatia was known to have a high prevalence of scabies (11), yet the incidence of infestations seen in British troops was very low, as it was for the Gulf War (3). These findings are consistent with another recent Bosnian study (5), where no cases of infestation in two army companies were found. It was probable that British troops' attention to personal hygiene and laundry was high despite their difficult living circumstances, but with the high incidence locally and living conditions there was the potential for infestation to become a serious public health problem.

Athlete's foot was uncommon, forming about 3%, as it was elsewhere in Bosnia (5). There is, however, a wide variation in published estimates of the incidence of athlete's foot; for example, in one study (12) up to 70% of people were thought to have this condition, whereas in a study of people using a swimming bath the overall incidence of tinea pedis was found to be 8.5% (13).

About 10% of the consultations were for warts and verrucae (by experience approximately equally distributed) and this would agree with the observation of an incidence of 4.8% for verrucae in juveniles (13).

There were a few cases of syccosis barbae, and, even had the incidence been higher, it would not have had the impact on wearing personal protective equipment seen in the Gulf War (3) because the requirement for respirators on Operation Resolute in the period studied was negligible.

Although many patients were young, the incidence of consultations for acne was very low (2%), possibly because patients with conditions which have cosmetic importance in normal circumstances may not have regarded their conditions as sufficiently serious to warrant treatment on operation. There is evidence to suggest that the incidence of acne peaks at about 35% in adolescents aged 16 to 19 (14), and that, in boys, only a small proportion (15%) seek medical advice about it (14).

The three cases of psoriasis represented 2% of the consultations for dermatological conditions; with an incidence of 2% for psoriasis in temperate zones (15) a larger number of consultations might have been expected. However, psoriasis could be a cause for rejection at initial examination for entry in to the services, or for restriction on the deployability, and hence the incidence and consultation rate in the deployed troops would be

expected to be low. Two of the three cases were returned to the UK because the required definitive treatment was not possible with the local bathing facilities and shift work of the patients involved. (The case of ichthyosis vulgaris was also evacuated because the patient could not maintain adequate hydration of his skin with the available bathing facilities and living conditions). It could be argued that, as a high proportion (66%) of those troops consulting with psoriasis were repatriated at a cost to the taxpayer, troops with psoriasis should be carefully assessed before deployment on such operations.

It is reassuring that the wearing of occlusive clothing which can allow sweat to accumulate, particularly in the boot, did not lead to immersion foot injuries, or dermatitis between the legs (15), despite the wet conditions of work and living. It is possible that the wearing of the Matterhorn boot, with its Gortex lining, contributed to the overall paucity of foot problems.

It is anticipated that during the summer months, when temperatures would increase considerably, the spectrum of cases would change; for example, the number of patients with insect bite reactions and cold sores would rise; bacterial injury, sweaty feet and eczema would increase (15); and sunburn, prickly heat, phototoxic rash and polymorphic light eruption would become more common as they did during the Gulf War (3).

In Vietnam, with its influence of climate, skin disease led to 70% of the lost combat man-days (15), but, fortunately, here, in a sample period from 1-29 February 1996, no days were lost for skin conditions and only 4% (12 out of 300 days) of the limited duties disposals were for skin problems, and, overall, three patients (out of 165) were repatriated to the UK for skin diseases. Dermatological disease therefore did not represent a serious cause for concern at Split in winter on this operation, but medical officers deploying to such a region in future should be conversant with, and prepare for, the full range of skin diseases seen in civilian general practice.

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