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Original Article

Pattern of skin disorders in Muzaffarabad: a comparison of pre- and post-earthquake scenario

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Abstract

Background Psyche or mind is the largest function in the body, while skin is the largest organ in the body. The anatomical and physiological integrity is maintained when they are congruent in their functioning. Natural calamities and disasters affect this harmony adversely by causing psychological as well as physical trauma, which leads to a number of immediate as well as long term skin ailments.

Objective The study was aimed to observe any change in pattern of skin diseases in Muzaffarabad after devastating earthquake of October 8th, 2005.

Patients and methods The study was carried out in CMH, Muzaffarabad from March, 2006 to August 2006. Patient's record of same six months of last year was retrieved and was compared with present record. Patients of all ages, with any cutaneous disease, attending the outpatient departments or admitted to the skin ward of Combined Military Hospital Muzaffarabad, from 1st March 2006 to 31st August 2006, were included in the study. A detailed dermatological evaluation was carried out in all patients. Relevant investigations like scraping for fungus and biopsy were done when required. In door as well as out patients' record for the same period of last year (2005) was retrieved. The information were duly documented and compiled. Prevalence of various common skin disorders was compared in pre and post earthquake scenario and statistical evaluation was done by calculating p-value after applying z-test.

Results In post-earthquake period, over all proportion of skin patients increased when compared with similar per-earthquake period. Infections remained at the top in both scenarios but their proportion increased significantly after earthquake period. Psychocutaneous disorders like, trichotillomania and dermatitis artifacta were also frequently seen in post-earthquake period. Hair, nail, pigmentary disorders, sexually transmitted infections were statistically less frequent in post earthquake period. Eczemas, psoriasis and vitiligo also occurred less commonly.

Conclusion A significant increase in overall proportion of skin patients and prevalence of bacterial infections, viral infections, scabies and certain psychocutaneous disorders was probably related to compromised hygiene and sanitation and psychological trauma as consequence of devastating earthquake of October 8th, 2005.

Key words
Skin disorders, psychocutaneous disorders, disaster medicine.

Introduction

Discomfort, disease or disorders are the terms used when the normality in structure and or function is altered. Pathology connotes altered levels in intensity, duration and/or frequency of any of these manifestations of mind or body.[1,2] Skin diseases are of major importance in any community. Although they cause few fatalities, they are a significant cause of physical as well as psychological morbidity and poor morale. The chronicity and continued nuisance associated with certain dermatoses contribute significantly towards overall morbidity.[3] Dermatologists function not only in peace but are also frequently called upon to participate in assistance missions in various national and international catastrophes. In initial phase of a natural disaster like earthquake, their primary role is to provide better skin and wound care to avoid septic complications. In the second phase, the role of dermatologist becomes even more important; as during rehabilitation phase, there is likelihood of spread of many communicable skin diseases, due to poor hygienic and socioeconomic factors.[4]

Because of the effects of psychological trauma sustained during disaster, many skin diseases may come up or existing disease may get aggravated. Moreover, many physical and psychological differences exist among human populations. These differences are partly based on environmental, geopolitical, cultural and socioeconomic factors and may lead to variable prevalence of skin disorders in different populations and in same population under different circumstances.[5] Various studies carried out in the country reveal that infectious skin diseases are the commonest among all skin disorders followed by eczemas and paulosquamous disorders. Amongst the infections pyogenic infections mostly remain at the top followed by skin infestations, fungal infections and viral infections.[6-9] The purpose of the study was to see the patterns of skin diseases in the people of Muzaffarabad and to compare this pattern in two different scenarios, i.e. before and after the devastating disaster of earthquake.

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Patients and methods

Patients of all ages, with any cutaneous disease, attending the outpatient departments or admitted to the skin ward of Combined Military Hospital Muzaffarabad, from 1st March 2006 to 31st August 2006, were included in the study. A detailed dermatological evaluation was carried out in all patients. Relevant investigations like scraping for fungus and biopsy were done when required. The patients were managed accordingly. Indoor as well as outpatients' record for the same period of last year (2005) was retrieved and documented. Prevalence of various skin disorders before and after earthquake was compared. Statistical evaluation was done by applying z-test for difference between two proportions and p value of <0.05 was considered significant.

Results

A significant number of patients were found having skin problems in pre-earthquake as well as in post-earthquake periods. However there was considerable increase in over all proportion of skin patients in post-earthquake period.

Table-1 Prevalence of skin disorders before and after earthquake.

No.	*Diseases (Categories)*	*March 2005-August 2005 n = 13003*	*March 2006-August 2006 n = 10074*
1.	Cutaneous Infections (Bacterial, fungal & viral)	3001 (23.0%)*	3011 (29.9%)
2.	Cutaneous parasitic infections (Scabies, leishmaniasis, larva migrans)	2601 (20.0%)*	2895 (28.7%)
3.	Eczematous disorders	2080 (16.0%)	1240 (12.3%)
4.	Acne/folliculitis	1676 (12.9%)*	846 (8.4%)
5.	Papulosquamous disorders	1390 (10.7%)	910 (9.0%)
6.	Hair disorders	801 (6.1%)*	354 (3.5%)
7.	Pigmentary disorders	397 (3.0%)*	112 (1.1%)
8.	Nail disorders	372 (2.9%)*	100 (1%)
9.	Keloids/scars & related disorders	145 (1.1%)*	199 (2.0%)
10.	Psychocutaneous disorders	95 (0.7%)*	251 (2.5%)
11.	Congenital/hereditary disorders	90 (0.7%)	30 (0.3%)
12.	Sexually transmitted infections	78 (0.6%)*	18 (0.18%)
13.	Drug reactions	75 (0.6%)	30 (0.3%)
14.	Reaction patterns	63 (0.5%)	22 (0.2%)
15.	Connective Tissue disorders	31 (0.24%)	11 (0.1%)
16.	Autoimmune bullous disorders	22 (0.17%)	9 (0.1%)
17.	Malignant disorders	9 (0.07%)	2 (0.02%)
18.	Ulcers	17 (0.13%)	18 (0.18%)
19.	Miscellaneous	44 (0.34%)*	8 (0.08%)

* $p < 0.05$

In the post-earthquake scenario, a total of 41094 patients were registered during the period of study. Out of these, 10074 had various skin disorders (24.5 % as against 15.2 % in pre-earthquake times). The proportional prevalence of various infective as well as non-infective skin disorders (pre- and post-earthquake) is shown in **Table 1**. The cutaneous infections and infestations were the most common presentations recorded in 5906 cases (58.6% as against 43.1 % in pre-earthquake times). Infective skin disorders outnumbered non-infective disorders in post-earthquake period while in pre-disaster time; non-infective disorders were more common. Amongst individual skin disease categories skin infections (bacterial, fungal and viral) remained at the top of the list in both the periods (29.9% and 23%, respectively), immediately followed by skin infestations, mainly scabies, 28.7% and 20%, respectively.

A statistically significant difference in pattern of certain skin disorders was seen. Skin infections (impetigo, furuncles, and chicken pox), skin infestations (scabies), keloids and psychocutaneous disorders (trichotillomania and dermatitis artifacta) were clearly seen more prevalent in post-disaster period ($p<0.05$). Hair, nail, acne, pigmentary and miscellaneous (uncategorized) disorders were more common in pre-disaster period ($p<0.05$). Difference between other disease categories ($p>0.05$) was not very marked. In post-earthquake period, more unusual and complicated cases of scabies (crusted, eczematoid and infected) were seen

and psoriasis was mostly encountered in children.

Discussion

Skin diseases are generally regarded as lesser maladies, which as a rule; neither threaten life nor seriously impair health. For the individual this may be true, but if we see in a larger perspective, skin ailments contribute significantly towards over all morbidity. And when skin disorders are compounded with or associated with mental trauma, overcrowding and poor hygienic conditions, the collective results of such minor affections may produce a grave psychosocial impact.[3,10] Skin problems are generally among the most common diseases seen in primary care settings in various regions of the world and the figures for prevalence ranges from 20% to 80% in developing countries.[11-13] Infections remain the number one skin ailments in various communities of developing countries as against eczemas and acne in Europeans.[14,15] Main risk factors associated with the prevalence of skin diseases in developing countries appear to be household overcrowding, poor hygiene and sanitation and prevailing climatic conditions.[8,16]

Our study was carried out in an area which was badly affected by a devastating earthquake in recent past to see any difference in pattern of skin disorders. To exclude the role of different climatic conditions during the year, the skin disorders occurring in post-earthquake period of 6 months were compared with the disorders seen in the same 6 months of the previous year (pre-earthquake). We found significant increase in prevalence of all skin infections in post-earthquake period, especially pyogenic infections (impetigo, furuncles), chicken pox and scabies. This increase was most likely due to household overcrowding and compromised conditions of hygiene and sanitation. Apart from increased prevalence, skin infections occurred in extensive and complicated forms and sometimes in little unusual way, as we encountered many cases of severe pyodermas, crusted scabies, infected and eczematoid scabies with involvement of face and atypical chicken pox.

Increase in keloids and hypertrophic scar was obviously related to the management of wounds during disaster time in less than ideal antiseptic and skillful manners. Significant increase in psychocutaneous disorders, especially trichotillomania and dermatitis artefecta was possibly due to psychological trauma caused by the devastating disaster itself and was augmented by the subsequent psychosocial and economic hardships faced by a large portion of the affected population.

Significant decrease in hair, nail pigmentary, hereditary and miscellaneous disorders was probably due to the reason that patients became less concerned about cosmetic and minor chronic disorders. Psychological trauma could possibly be an aggravating factor in some other disorders like, eczemas, psoriasis and vitiligo[17] but we found some decrease in prevalence of these diseases (although statistically not significant). This could again be because of an attitude of less concern towards these chronic ailments and an extended study may show an actual increase in future.

Conclusion

Skin problems are generally among the most common diseases seen in primary care settings in regions like Pakistan. A significant increase in overall proportion of skin patients and prevalence of certain skin disorders like

bacterial & viral infections, scabies and certain psychocutaneous disorders seem related to psychologigical trauma and other outcomes of devastating earthquake of October 8th, 2006. Therefore, in scenario following any natural calamity like earthquake, all efforts should be made to minimize the psychological trauma to the affected population and to maintain reasonably good living conditions with adequate sanitation and hygiene, so that most of the skin disorders including easily communicable dermatoses can be prevented and controlled.

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