

The Earthquake and the Skin: Step by Step Experience from Nepal

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ABSTRACT

Nepal experienced the worst and the biggest earthquake of the century on 25th April, 2015. A magnitude of 7.9 on the Richter scale with an epicenter in Gorkha district of Nepal had killed thousands of denizens and had left millions homeless. An observational prospective study was conducted from May 2015 - May 2016 to evaluate the clinical and epidemiological profile of Skin diseases in patients affected by the earthquake at the earthquake affected regions in Nepal.

A total of 7272 patients were treated of which 859 (11.8%) had come for Dermatology visits. There were 355 males and 504 females. The age ranged from 0.4 - 91 years. The commonest disease that were seen were Urticaria/Pruritus in 172(20%) of patients followed by Eczema in 165(19.2%). Fungal Infections was the commonest amongst infectious diseases seen in 145(16.9%) patients while in the non infectious group urticaria and pruritus was seen in 172(20%) followed by eczemas.

Hot and humid temperature, living in crowded rooms and outdoor facilities and lack of personal hygiene in sheltered tents could have been the most common predisposing factors for the dermatoses.

INTRODUCTION

An earthquake of magnitude 7.9 on the Richter scale hit Nepal on the 25th of April, 2015 with its epicenter in Gorkha. Several aftershocks preceded there after killing thousands of people and rendering millions homeless. The entire villages were flattened and many of the historic monuments and squares were reduced to shambles. This was the worst natural disaster Nepal had experienced after the earthquake it has experienced in 1934. A group of health practitioners planned out to carry out a comprehensive medical care outreach facilities in areas devastated by the massive earthquake by conducting 12clinics/year.

MATERIALS AND METHODS

An observational prospective study was conducted from May 2015- May 2016 to evaluate the clinical and epidemiological profile of Skin diseases in patients affected by the earthquake at the earthquake affected regions in Nepal. A multidisciplinary mobile health camps and clinics were conducted in 12 different remote earthquake affected regions including the regions where the epicenter was located by a team of specialist doctors, paramedics and health professionals. The place that were covered included Sindhupalchowk, Nuwakot, Dolakha, Rasuwa, Manang, Dhading, Kavre, Tanahu , Kathmandu and Gorkha Districts of Nepal. (Figure 1)



Figure 1: Places covered by the mobile outreach camps and clinics

Datas were compiled, entered and analysed using SPSS version 2.6. Continuous measures were expressed as means $\pm$ standard deviations for normally distributed data and medians and percentiles for non-normally distributed data. Descriptive statistics were used to describe demographic data.

RESULTS

A total of 7272 patients were treated in the camps of which 859 (11.8%) had come for dermatological ailments. There were 355 (41.32%) males and 504(58.6%) were females. The age of the patients ranged from 0.4 - 91 years. Age wise distribution is depicted in table 1.

Table 1: Age wise distribution of patients

Age Group	Number	Percentage
≤ 10	107	12.5
10-20	168	19.3
21-30	178	20.7
31-40	104	12.1
41-50	110	12.8
≥ 50	194	22.6

The five most common diseases that were seen amongst the patients were urticaria/pruritus in 172(20%) of patients followed by eczema in 165(19.2%). (Table 2)

Table 2: The five most common skin diseases amongst patients

SN	Disease	Number	Percentage
1	Urticaria/Pruritus	172	20
2	Eczema	165	19.2
3	Fungal Infection	145	16.9
4	PMLE	70	8.1
5	Pyoderma	65	7.6

Both infectious and non infectious diseases were seen in the patients examined. Fungal Infections was the commonest amongst infectious diseases seen in 145(16.9%) patients followed by viral infections in 32 (3.7%) patients. (Table3).

Table 3: Disease frequency among the infectious group

Disease	Number	Frequency
Fungal Infections	145	16.9
Viral Infections	32	3.7
Scabies	15	1.7
Pediculosis	10	1.2
Impetigo/Pyodermas	65	7.6
STI	1	0.1

In the non infectious group urticaria and pruritus was seen in 172(20%) followed by eczemas in 134(19.2%) patients. (Table 4)

Table 4: Disease frequency among the non infectious group

Disease	Number	Percentage
Acne	54	6.3
Eczemas	134	19.2
Urticaria/ Pruritus	172	20
Pigmentary Disorders	24	2.8
Vitiligo	31	3.6
Melasma		
Insect Bite	41	4.8
Hypersensitivity		
PMLE	70	8.1
Psoriasis	18	2.1
Lichen Planus	6	0.7
Purpura	4	0.5

Eczema was the most common diseases seen in 74(20.8%) males followed by fungal diseases in 68(19.2%) patients. (Table 5)

Table 5: The five commonest diseases among the male patients

SN	Disease	Number	Percentage
1	Eczema	74	20.8
2	Fungal Disease	68	19.2
3	Urticaria/Pruritus	52	14.6
4	Pyodermas	33	9.3
5	Acne	28	7.9

The females presented with urticaria/pruritus in 120(23.8%) patients followed by eczema in 91(18.0%) patients. (Table 6).

Table 6: The five commonest diseases among the female patients

SN	Disease	Number	Percentage
1	Urticaria/Pruritus	120	23.8
2	Eczema	91	18.0
3	Fungal Infection	77	15.3
4	PMLE	47	9.3
5	Impetigo/Pyoderma	32	6.3

Correlating the disease frequency with age group it was seen that urticaria/pruritus was commonly seen in the age group 30 years and above while the pediatric age group presented more with Insect bite hypersensitivity reaction. (Table 7)

Table 7: Disease Frequency according to the age group in patients

Age Group	Disease	Number	Percentage
≤ 10	IBH	21/107	19.6
10-20	Fungal Infection	39/166	23.5
21-30	Fungal Infection	38/178	21.3
31-40	Urticaria/ Pruritus	33/104	31.7
41-50	Urticaria/ Pruritus	22/110	20.0
≥50	Urticaria/ Pruritus	66/194	34.0

DISCUSSION

The global prevalence of skin disease was found to be 24%^{1,2}. In Nepal, according to the ministry of health and population skin diseases has been described as a leading cause of morbidity with 2,500,000 registered visits in opd/year and the fourth most common cause of consultation.³ Similarly in a study done by Shrestha et al, the prevalence of skin diseases has also been found to be 23.8%⁴. Skin related diseases were one of the frequently consulted diseases in the outreach camps in our study as well among the other medical consultations.

Urticaria and pruritus was the commonest diseases seen in our study. Similar reports have been cited in the literature following the earthquake in Sichuan district following an earthquake in 2008⁵ and Franco reported a prevalence of parasitic infections more common in a study done in north-western Turkey after their major earthquake in 1999.⁶ Insect bite hypersensitivity reactions were more common in the paediatric age group in our study and parasitic infestations like pediculosis and scabies were also reported in our patients. Hot and humid temperature, living in crowded rooms and outdoor facilities and lack of personal hygiene in sheltered tents could have been the most common predisposing factors for the dermatoses in our settings.

Infectious diseases were also seen in the majority of the patients examined. Fungal, Viral infections and

Pyodermas were more common. This could be explained by the fact that the study focused in the pre monsoon, monsoon and summer season of Nepal followed by lack of water supply at tents and outdoor community shelters leading to lack of personal hygiene and overcrowding in the majority of the places. Psycho-emotional stress in few of the patients showed an exacerbation of their eczemas, pre existing psoriasis and vitiligo. These diseases have well been documented in which stress could be an exacerbating factor. Similar cases have also been reported by Karn⁷ which mentions the exacerbation of stress related dermatosis immediate after the earthquake.

Polymorphic light eruptions and other photodermatitis was also seen in this study which can be explained by the fact that most of the patients were working either unprotected in the fields and engaged in other outdoor activities like rebuilding.

Earthquakes are not an everyday natural disaster. This study, thus reports the finding of the earthquake affected people over a 1 year study period covering a larger population than studied in the literature.

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