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A clinicoepidemiological study of flood dermatoses from North East India

Dr Ann John Kurien, Dr Joydeep Roy

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I. INTRODUCTION

Floods are the most common type of disaster globally, responsible for almost 53,000 deaths the last decade alone. In the ten years prior to 2011, flooding has been the most common type of disaster globally, responsible for almost half of all victims of natural disasters and for economic losses of nearly US $185 trillion. [1]

Flood is defined as an overflow of water expansion from hydrometeorological and geophysical disasters such as flood in Bangladesh (2004), Hurricane Katrina in the USA (2005), earthquake in Haiti (2010), the great eastern Japan earthquake and tsunami (2011), and floods in Thailand (2011). It is one of the most common catastrophes, involving about 40% of the total natural calamities worldwide,[2–4] and causing multiple environmental and healthcare-related consequences, such as direct injuries to humans, animals and other living beings, contamination of drinking water resources, food and chemical materials, outbreaks of infectious and water-borne disease and psychological health disturbances. Flooding events are expected to increase in frequency and intensity due to rising sea levels and more frequent and extreme precipitation events .[5] In addition, increasing levels of urbanization mean that more people will be exposed to flooding events.[6] It is thought that floods will increase the global burden of disease, morbidity, mortality, social and economic disruptions and will place a continuing stress on health services, especially in low-resource countries. It is in these countries where most major floods occur and where vulnerability is the highest.[7] Health consequences of floods depend on geographic and socioeconomic factors, as well as the baseline vulnerability of the populations affected.[5]

Flooding also compromises the healthcare systems, such as access to crucial health services, local health services capacity, needs for evacuees, and clinic settlement,[8–10] which require emergency disaster reaction to provide prompt treatment to patients such as immediate wound care, antibiotics, pain management, tetanus toxoid and also effective management of flood-related skin diseases.

The skin is the organ system most vulnerable to direct injury in the setting of extreme weather events, such as severe flooding. Skin penetration from injury increases the risk of secondary bacterial infection acutely and can also lead to chronic morbidity. Flood-related skin diseases are a portion of these complications, which manifest in cutaneous and/or signs of systemic illnesses due to prolonged exposure to contaminated water and unhygienic conditions during floods. These conditions can be categorized into four groups namely:

(i) inflammatory skin diseases (e.g. irritant contact dermatitis); (ii) skin infections (e.g. fungal and bacterial infections); (iii) traumatic skin diseases; and (iv) other miscellaneous skin diseases (e.g. insect bite reaction and psycho-emotion aggravated primary skin diseases.

The present study aims to understand the pattern of flood dermatoses from a valley town in North East India.

II. MATERIALS AND METHODS

This is a community based study which was conducted over a period of 7 days during June 2022 to find the pattern of flood dermatoses in patients, attending camps conducted by Dermatology department of Silchar Medical College and Hospital, Silchar, Assam after the devastating floods which wrecked the Barak valley, due to a breach of dyke at Bethkundi. The flooding affected 5.4 million people across 32 districts and caused deaths of over 200 people across effected districts.

In the given period, camps were conducted in over 36 centers. These patients were evaluated after due consent, with relevant and detailed clinical history and examination. Data such as demographic information – age, complaints at the time of presentation, duration of complaints and any treatment taken for the complaints were collected. A clinical diagnosis was made on the basis of clinical features . Treatment was provided to the patient based on clinical judgment.

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III. RESULTS

During the study period, total 1500 patients, i.e., those patients who attended camps with predominantly dermatological complaints were included in the study population. Out of the total number of patients, 810(54%) were male and 690(46%) were female. Male to female ratio was 1.17:1. Majority of the patients were from rural background (74%) while the rest (26 %) were from urban area. Most of the males were daily wage workers (66%), followed by farmers (22%) and private firm employees (12%). Majority of the female patients (62%) were homemakers. Most of the cases were seen in 31- 50 years age group accounting for 820 cases (54.6%).

Majority of patients, i.e., 500(33.33%) patients presented with pyoderma, followed by 300(20%) cases of fungal infections(tinea). 200(13.33%) cases presented with scabies.180(12%) cases presented with aggravation of primary skin disease.100(6.6%) cases presented with infected eczema. 50(3.3%) cases each were found of pitted keratolysis, irritant contact dermatitis and insect bite hypersensitivity.

Pictures:

Figure 1: Picture showing one of the camp sites

Figure 2: Infected eczema: Scaling, lichenification and exudates can be seen

Figure 4: Pyoderma : Tender, inflamed areas with purulent discharge

Figure 5: Tinea pedis: fissuring, scaling and maceration

Figure 6: Onychomycosis with intertrigo

Figure 7: Aggravation of existing skin disease: Psoriasis: Exfoliation around nail folds, silvery white scaling and distal onycholysis

IV. DISCUSSION:

Our findings are in accordance with studies done during flood disasters from across the world such as Ivers LC et. al, Elewski BE et al. and Gupta AK et al.[11,12,13]

Flood-related skin diseases represent various clinical spectrums. Multiple factors associated with these varieties including environmental factors (endemic area, the natural course, and severity of disaster) and personal factors (medical and dermatological underlying diseases). Inflammatory skin diseases and infections from bacteria, fungus, traumatic skin diseases, vector-borne diseases and psycho-emotional disorders potentially cause the enormous problems in the public health system. Psychological health issues from loss should be determined and alleviated. Most importantly, dermatologists and general practitioners should comprehensively enhance themselves with the basic knowledge of these conditions for the accomplishment of efficacious and best treatment outcomes.

V. CONCLUSION

The present study was an attempt to provide an insight and overview of the pattern of flood dermatoses in patients from North east India. A comprehensive understanding of the various flood dermatoses and their aetiology and presentation is essential to avoid their much preventable long-term sequelae. Relentless efforts must be made to raise awareness and educate the general population about these diseases.Disaster management and preparedness measures must be emphasized upon.

Conflict of Interest

The authors declare that they have no conflict of interest.

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