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Original Article

Burns in Jammu: Retrospective analysis from a regional centre



Amir Parray*, Mohd Ashraf, Ratnakar Sharma, Rakesh Saraf

Department of Surgery, Government Medical College, Jammu, India

ARTICLE INFO

Article history:

Received 12 March 2015

Accepted 25 March 2015

Available online 23 April 2015

Keywords:

Burns

Epidemiology

Bride burning

ABSTRACT

Background: Despite clinical, socio-political and academic interest, little is known about the incidence and demographic characteristics of patients with major burns in India.

Objectives: To better understand the epidemiological and clinico-pathological aspects of burns in Jammu, we undertook a study in the Government Medical College which caters to a population of 50 lakhs. The study was done to identify and analyze the demographic and socio-cultural aspects of burn patients and various etiological factors causing burns in Jammu province and to suggest measures to prevent and reduce their incidence.

Materials and methods: We conducted a retrospective study on 2230 burn patients over a 17 year period from January 1994 to September 2010 who were admitted to the Government Medical College and Hospital, Jammu, India. The criteria for admission were, patients who had sustained (1) >10% total body surface area (TBSA), second-degree burns (2) any third-degree burn and (3) any electric or chemical burn. The information was obtained from the burn ward database. Additional data was collected from the ward and patient admission records. All data were entered into MS–Excel spreadsheets for further analysis. Descriptive statistics were used to analyze variables. The patients were analyzed for epidemiology data, risk factors, cause of burns and outcome of burns.

Results: Sixty percent (1333) were females with a male: female ratio of 1:1.67. Eighty one percent (1811) were adults greater than 15 years, of whom 57% (1268) were aged between 21 and 40 years and 19% (419) were children (0–15 years). Eighty one percent (1684) of patients were Hindus. Flame burns were the most common in adults 83% (1510) and scalds most common in children (0–10 years) 55% (144). Fifty three percent (1046) patients had extensive burns involving 41% or more of their body surface area with 33% (738) having burns involving greater than 60% body surface area (BSA). The overall mortality rate was 45% (1011). It was 73% (733) in females and 27% (278) in males. Mortality was directly in proportion to increase in the TBSA burnt. There was an 88% (650) mortality in more than 60% TBSA burn, 64% (208) in 51–60% TBSA, 45% (238) in 41–50% TBSA burn and 7.2% (15) in 0–20% TBSA burn. The average length of hospital stay was 22 days.

Conclusions: In Jammu region burns are a major public health problem with about 60% of those affected being in their third and fourth decades of life. Adults mainly had flame burns and were predominantly women. Children sustained scalds. The overall mortality rate was 45% with 73% of females burnt dying.

Abbreviations: TBSA, Total body surface area; ASHA, Accredited social health activist; ICDS, Integrated Child Development Services; PHC, Primary Health Centre; CHC, Community Health Centre.

* Corresponding author.

E-mail address: aamirparray@gmail.com (A. Parray).

<http://dx.doi.org/10.1016/j.cmrp.2015.03.006>

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Being a public health problems, urgent social, political and educational measures should be taken to prevent burns in Jammu.

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1. Introduction

Burns have been described by the World Health Organization (WHO) as the 'forgotten global public health crisis.' 11 million people in a year suffer burns requiring medical attention. More women worldwide are severely burned each year than are diagnosed with HIV and TB combined. The global epicenter of burns is South-East Asia: of the 320,000 global deaths from fire-related burns, over half (184,000) occur in this region. Two thirds of these burns affect females, primarily children and young women. In this region, more children die from severe burns than from HIV/AIDS, malaria and respiratory disease combined.¹

Every minute in India, five people are severely burned. India has an estimated annual burn incidence of 6–7 million, based on data from major hospitals when extrapolated to the whole of the country, which is the second largest group of injuries after road accidents. Nearly 10% of these are life threatening and require hospitalization. Approximately 50% of those hospitalized succumb to their injuries. Nearly 1 to 1.5 lakh people become crippled and require multiple surgical procedures and prolonged rehabilitation. Seventy percent of the burn victims are in the most productive age group of 15–40 years and most of the patients belong to the poor socioeconomic strata. All these figures are approximations because we have no national data on burn injury as it is not a notifiable disease and there is no central registry.²

The absence of stringent laws on environmental safety, sub-standard manufacturing of household electric and cooking equipment and a general lack of safety consciousness are the reasons for our failure to curb this preventable menace. The economic aspect of burns also needs to be addressed. The cost of treatment and rehabilitation is prohibitive and because most burn victims are poor there is a shortage of specialized burn units in the private sector and a reluctance on the part of these hospitals to share the burden with public institutions.²

However, despite serious clinical, socio-political and academic interest in burns, little is known of the scope of the problem. To better understand the epidemiological and clinic-pathological aspects of burns in Jammu, we undertook a study in the Government College, Jammu which caters to a population of 50 lakhs (2011 census) in the hope of providing much needed preliminary data to stimulate further investigation and to undertake preventive measures and cost-effective treatment methods to alleviate the sufferings of patients with burns.

2. Aims and objectives

1. To identify and analyze the demographic and socio-cultural aspects of burn patients and various etiological factors causing burns in Jammu province.

2. To suggest measures to prevent and reduce the incidence of burns.

3. Patients and methods

We conducted a retrospective study on 2230 burn patients over a 17 year period from January 1994 to September 2010 at the Government Medical College and Hospital, Jammu, India. The study population was from the 10 districts included in the Jammu province situated in Northern part of India and patients referred from other departments and peripheral health centres. The patients were admitted through the Casualty department to the Burns Care Unit of the department of General Surgery. The criteria for admission of patients who had sustained burns were as follows:

1. Any patient who had sustained >10% total body surface area (TBSA) second-degree burns.
2. Any one with third-degree burns.
3. Any patient who had sustained a chemical or electrical burn.

The information was obtained from the Burns Ward database. Additional data were garnered from the ward registers and patient admission files. In Burns Unit, demographic and clinical data is collected on specific pre-defined forms for all patients by resident doctors. These included the nature and mechanism of trauma, various degree indices, prehospital and in-hospital evaluation and initial treatment, medical and surgical management, and procedures performed. We analyzed demographic factors (age, race, gender), the aetiological and clinical characteristics (severity of burn, inhalation injury, treatment, ICU admission), and outcome. The total body surface area percentage index was used to determine burn severity.

4. Statistical analysis

The data collected was entered into MS–Excel spreadsheets for further analysis and the analysis was done by transcription, preliminary data inspection, content analysis, and interpretation. Percentages were used to analyze variables.

5. Results

Over a period of 17 years a total of 2230 patients were analyzed for age, sex, underlying risk factors, cause of burns, outcome and mortality.

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