



CLINICAL PROFILE OF BURN PATIENTS IN A TERTIARY CARE HOSPITAL OF BUNDELKHAND REGION OF INDIA

General Surgery

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ABSTRACT

Background: Burns are a global public health concern. In India every year a substantial proportion of death occur due to burn injuries. Burn injuries lead a serious medical, social, and psychological problem along with severe economic loss to individual and their family. A clinical profile of burn patients is essential to treat and reduce the complications and so present study was conducted.

Material and Methods: A total 250 Burn cases were analyzed admitted in the burns unit of Maharani Laxmi Bai Medical College and Hospital over a period of 18 month. The data were obtained by questionnaire as well as through interview. Clinical assessment of the wound included total burnt surface area (TBSA), depth, co-morbid condition, complications and follow up.

Result: Most of the patients were deeply burnt (85.2%). Maximum numbers of patient 18.4% were having TBSA (Total burnt surface area) between 21-30%. Most common complication was wound infection (43.6%) followed by Septicaemia/Urinary tract infection i.e. UTI (13.2%), Acute respiratory distress syndrome i.e. ARDS (13.2%) and Burn shock (7.2%). More than half of burn patients (55.2%) were not come for follow up. In relation with hospital stay most of the patients were left hospital within 5 days of admission (56.8%) followed by 5-10 days (25.2%). Male population was most commonly affected for all other type of burns except thermal burns.

Conclusion: Most common complication was wound infection. The time of stay in hospital is very less and most of patients had not come for follow up. Male population was more vulnerable to all types of burns except thermal burns.

KEYWORDS

Burn injuries, Clinical Profile, Tertiary Care Hospital, Bundelkhand

INTRODUCTION

According to World Health Organization, in India, every year over 1 million people are moderately or severely burnt. People living in low- and middle-income countries are at higher risk for burns than people living in high-income countries and within all countries however, burn risk correlates with socioeconomic status¹. Bundelkhand region is one of the driest and under developed region situated between Uttar Pradesh and Madhya Pradesh states of India. Poor socioeconomic condition and dried climate lead to increased incidence of burn cases in the region. A clinical profile of burn patients of this region is essential to treat and reduce the complications and so present study was conducted.

MATERIALS AND METHODS

Present study was conducted in a tertiary care hospital attached with the Maharani Laxmi Bai Medical College Jhansi (Uttar Pradesh), India. An approval from Institute Ethics Committee obtained before the commencement of study. A total 250 Burn cases were analyzed admitted in the burns unit of Maharani Laxmi Bai Medical College and Hospital over a period of 18 month (March 2018 to September 2019). A questionnaire was developed and it was modified as per requirement after pilot study. A clinical examination (by Wallace rule of nine and Lund and Browder chart in adults and children respectively) was done to assess the degree of the burn and total burnt surface area (TBSA). Clinical assessment of the wound included total burnt surface area (TBSA), depth, co-morbid condition, complications and follow up.

The data were obtained by questionnaire as well as through interview with the patient themselves or relatives or attendants. All patients, regardless of age and gender, presented with burn injury and who has given consent to participate in the study has been included in the study. Patients with minor burn injury treated on OPD (outpatient department) basis and Patients not giving consent were excluded. The data of present study were analyzed by using SPSS 15.0. Different frequencies and association among the variables were statistically tested using chi-square test. Prospective study design was used in the study.

Tetanus prophylaxis was given. Parkland formula ($4 \text{ ml RL X kg X \% TBSA burn}$) was used for calculation of fluid requirement. Dressing with topical antimicrobials (Silver sulfadiazine, Povidone iodine, Soframycin) was done along with care of eyes, mouth and back. Third generation cephalosporins and metronidazole were commonly used antibiotics. Laboratory investigations like complete blood count, serum electrolytes, urea, creatinine, random blood sugar were done. Blood transfusions were given whenever necessary.

RESULTS

A total 250 Burn cases were analyzed admitted in the burns unit of Maharani Laxmi Bai Medical College and Hospital, Jhansi during study period. Most of the patients were deeply burnt (85.2%) and only few had superficial burn (14.2%). Maximum numbers of patient 18.4% were having TBSA (Total burnt surface area) between 21-30%, followed by 31-40% in 17.6% patients; least number of patients 4.4% was having TBSA 51-60%. There were 53.6% patients having co-morbid condition (Table-1).

Most common complication was wound infection (43.6%) followed by Septicaemia/Urinary tract infection i.e. UTI (13.2%), Acute respiratory distress syndrome i.e. ARDS (13.2%) and Burn shock (7.2%). More than half of burn patients (55.2%) were not come for follow up. In relation with hospital stay most of the patients were left hospital within 5 days of admission (56.8%) followed by 5-10 days (25.2%) while least number of the patients were stayed for >15 days (5.6%). Among nature of burn thermal burns were most common (72.4%) followed by scald (12.8), electrical burns (12.4%) and others (filigree and chemical) type of burns 2.4% only (Table-2) (Diagram-1 and Diagram-2).

All major burns most common complication was wound infection. Correlation between complications and nature of burn was significant (p value smaller than 0.05) (Table-3).

The thermal burns were most commonly affect female population (110 females out of total 181 thermal burns) whereas scald and electric

burns were most commonly affect male population (20 males out of total 32 scald and 27 males out of total 31 electrical burns). Other burns (filigree and chemical) were also mostly affected male population with male: female ratio 2:1. Correlation between sex and nature of burn was significant (p value smaller than 0.05) (Table-4).

Table-1: Distribution of patients according to depth of burn, TBSA and co-morbid condition (n=250)

Characteristics	Frequency
Depth of burn	
Superficial	36 (14.4)
Deep	214 (85.6)
TBSA (% of burn)	
0-10	35 (14.0)
11-20	36 (14.4)
21-30	46 (18.4)
31-40	44 (17.6)
41-50	30 (12.0)
51-60	11 (4.4)
61-70	16 (6.4)
>70	32 (12.8)
Co-morbid condition	
Present	134 (53.6)
Absent	116 (46.4)

*Values in parentheses are percentages

Table-2: Distribution of patients according to having visit for follow up, total duration of stay in hospital and nature of burn (n=250)

Characteristics	Frequency
Follow Up	
Yes	112 (44.8)
No	138 (55.2)
Duration (days)	
0-5	142 (56.8)
5-10	63 (25.2)
10-15	31 (12.4)
>15	14 (5.6)

*Values in parentheses are percentages.

Table- 3: Correlation between sex and nature of burn (N=250)

Sex	Nature of burn				Total
	Thermal	Scald	Electrical	Others	
Male	71	20	27	4	122
Female	110	12	4	2	128
Total	181	32	31	6	250

Chi-square value=29.341 p value<0.001 (0.000)

Diagram-1 Distribution of Patients According to Nature of Burn (N=250)

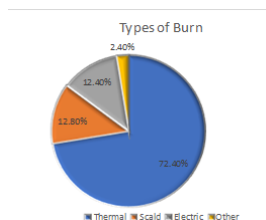
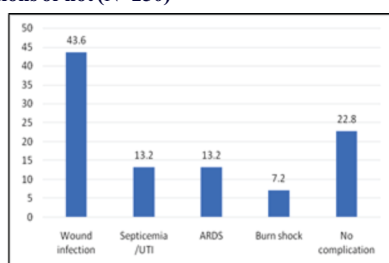


Diagram-2 Distribution of Patients According to having Complications or not (N=250)



DISCUSSION

In present study majority of the patients were deeply burnt (85.2%). Patients with minor burn injury treated on OPD (outpatient department) basis and not included in study. In a study by Dutta et al from West Bengal⁷ the majority (74.4%) of the burn victims had >25% of total body surface area affected by burn (TBSA) whereas in our maximum numbers of patient (71.6 %) were having TBSA >20%. There were 53.6% patients having co- morbid condition, it was similar with the findings of Rao et al¹.

In our study, most common complication was wound infection (43.6%) followed by Septicaemia/Urinary tract infection i.e.UTI (13.2%), Acute respiratory distress syndrome i.e. ARDS (13.2%) and Burn shock (7.2%). Similar findings were observed by others.^{4,5} More than half of burn patients (55.2%) were not come for follow up. Similar findings were observed by Bariar et al⁶ but Al- shlash et al⁷ reported contrary to our findings. In relation to length of stay in hospital most of the patients were left hospital within 5 days of admission (56.8%), whereas the mean length of stay of all the patients was 6.64 days in a study by Goswami et al from Jharkhand⁸.

Among nature of burn thermal burns were most common in our study. It was similar with the findings of Chakraborty et al and Dutta et al from West Bengal.^{9,2} Correlation between complications and nature of burn was significant (p value smaller than 0.05) and so they were associated with each other.

In our study except thermal burns all other type of burns male population was most commonly affected. Scald, electric burns, filigree and chemical burns could be linked with occupation mostly and so male population was affected more. Thermal burns are mostly associated with cooking and household activities hence female population was most commonly affected. Correlation between sex and nature of burn was significant (p value smaller than 0.05), so they were associated with each other. Similar finding was reported by Kumar et al. from Jharkhand¹⁰.

Limitations:

Our study also has some limitations. This study was based on history of events as narrated by patients or care takers so complete evaluation of facts may not be possible. Deciding nature of burn injury in view of medicolegal aspect may be difficult for many patients.

CONCLUSION

Our study focused the clinical profile of burn patients. Early health care facilities are essential to reduce complications and death, which is very difficult in such remote areas. To reduce the severity of burn patients, general awareness of common people need to be increased. Female population should be educated regarding cooking methods and safety instructions.

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