



STUDY OF INCIDENCE IN RELATION TO AGE, SEX RELIGION AND MODE OF BURN INJURY

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ABSTRACT

AIMS: The incidence of burn patients in relation to age, sex, Religion & mode of burn injury.

METHODOLOGY: The present study was done on 764 patients admitted in MSDS Medical College and Hospital Farrukhabad UP during Jan 2012 to Nov 2013. All enquiries were made about age, sex religion and mode of injury through Performa.

RESULTS: The commonest age group affected by burn was 15-30 years second most common was 0-14 years. Maximum number of patients affected by burn injury were females (62.82%). Majority of burn victims were Hindus (96.85%) and 3.14% patients were Muslims. Most of the burn injuries were accidental(96.20%).

CONCLUSION: It is concluded that burn injuries are common in young Hindu females and most of the time it's accidental and natural.

KEYWORDS :**INTRODUCTION**

Burn is a serious traumatic wound produced by thermal energy or chemical substances upon the protective covering of the body, damaging the underlying tissues. Burn injury is multifaceted multidimensional injury which deranges almost all the functions of the body depending on the extent of injury. The wound ranges from microscopic destruction at cellular level in first degree burn to complete coagulation of all layers of skin. Burn wound is a catastrophe. It affects the psychology of patients & the cost & suffering to family is also a issue for concern. These injuries have been simulated to a parasite, it imbibes & throws out the vital ingredients of water, protein & electrolytes. It causes pain, anxiety & leaves the patient with everlasting disabilities & disfigurement.

The present study has been carried out to study various aspects of patients admitted in surgical wards and Burn Unit to record the incidence, age-sex and residence wise distribution causes of burn and the result of various dressing techniques. The institution caters a large number of population and patients of all groups including various ages and both sexes with different economic strata and wide range of cause and extent of injury are admitted.

The present study was done on 764 patients admitted in MSDS(Major S.D Singh Medical College and Hospital) Medical College and Hospital Farrukhabad UP during Jan.2012 to Nov.2013. All enquiries were made about age, sex religion and mode of injury through Performa.

MATERIAL AND METHOD

The present study "**THE INCIDENCE OF BURN IN RELATION TO AGE, SEX RELIGION & MODE OF BURN**" was carried out in 764 patients admitted in surgical ward and burn unit, Department of General Surgery, MSD.S. Medical College & Hospital Farrukhabad (UP) during the period of January 2012 to September 2013.

The study includes patients of burns who were admitted through surgical OPD or casualty Department. On admission preliminary enquiries were made regarding name, age, sex, religion, and mode of burn injury

General & systemic examinations were performed to find out any associated problem. Routine investigation like Hb %, TLC & DLC, urine, blood sugar, blood urea, and other according to indication.

OBSERVATIONS**TABLE - 1 Incidence of Burn Patients**

Total No. of Admission in Surgical Wards	No. of Cases of Burn Admission	Percentage (%)
13408	764	5.69

It is evident from the above table that the incidence of burn patients admitted in surgical wards was 5.69.

TABLE - 2 Age & Sex Distribution of Burn Patients

S.N.	Age (in Yrs)	Male		Female		Total	
		No.	%	No.	%	No.	%
1	0-14	85	29.9	108	22.5	193	25.26
2	15-30	120	42.2	267	55.6	387	50.65
3	31-45	61	21.4	81	16.8	142	18.59
4	46-60	16	5.6	20	4.1	36	4.71
5	Above 60	02	0.7.	04	0.8	6	0.79
Total		284	100	480	100	764	100

It is evident from the above table that 480 of total cases of burn were female and out of this 55.6% patients were under the age of 15-30 yrs. Out of 284 male patients majority of patient i.e. 42.2% were under the age of 15-30 yrs. Youngest female patient was 1 month old and eldest was 75 yrs old female. The youngest male was 6 months old and eldest male was 63 years old.

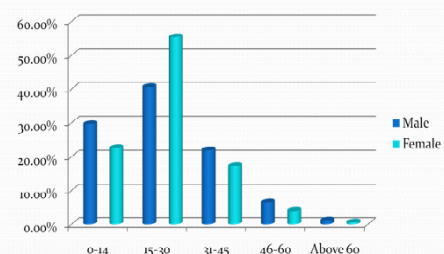
Age & Sex distribution

TABLE - 3 Distribution of Cases According to Religion

S. N.	Religion	Total No. of Patient	Percentage
1	Hindu	740	96.85
2	Muslims	24	3.14
Total		764	100

It is evident from the above table that the majority of burn victims were Hindus (96.85%). No Christian or Sikhs were encountered.

TABLE - 4 Distribution of Cases According to Mode of Injury

S. N.	Mode of Injury	Total No. of Patients				Total	
		Male	%	Female	%	No.	%
1	Accidental	285	96.93	450	95.74	735	96.20
2	Suicidal	06	2.04	19	4.04	25	3.27
3	Homicidal	03	1.02	01	0.21	04	0.52
Total		294	100.0	470	100.0	764	100.0

It is evident from the above table that in majority of patient were accidentally burnt (96.20%) among which majority were females. . Burn is a leading killer in the world and according to the available statistics about 20,000 people die every year from burns in India. Majority of them are women and children. Although the mortality rate and morbidity has decreased with better understanding of the pathophysiology and greater stress on correction of the fluid and electrolyte imbalance, improved methods of resuscitation. Yet in the words of **Kentish** "The final outcome is in the hands of unseen observer quite beyond the power of man".

DISCUSSION

INCIDENCE OF BURN:

In India over 1,00,000 people are affected by burns and scalds annually and about 20,000 of them die according to rough estimates. It amounts one fifth of the total cases, which is very high it needs study and particularly its prevention.

In the present study from table no. 1 in observations it is evident that 13154 patients were admitted in surgical wards among which 764 patients had burn injuries. Total incidence of burn patients in the surgical wards was 5.80%. The following table gives the comparative incidence of burn in different series -

S.N.	Author	Place	Year	Incidence
1.	Chandra	Delhi	1963	16.5
2.	Siddiqui	Jabalpur	1966	2.8
3.	Chandra Verma	Delhi	1967	18.7
4.	M.M. Modi	Rewa	1972	4.27
5.	Bajpayee	Rewa	1982	4.82
6.	Jha	Rewa	1989	3.5
7.	Girish Pratap	Rewa	1992	3.02
8.	Sudhir Jain	Rewa	2000	4.22
9.	Madan Mohan Mudgal	Rewa	2002	3.69
10	N. K. Chahal	Rewa	2004	4.04
11.	Raja Tiwari	Rewa	2007	3.94
12.	Present Study	Rewa	2010	5.81

As it is evident from the above table that this is raised incidence, almost 01% more than 4.82% found by **Bajpayee** in 1982, 3.5% found by **Jha** in 1989; 3.69% found by **M.M. Mudgal** in 2002 and 4.04% by **N. K. Chahal** in 2.04 i.e., to say that there is no significant variation from the other studies when total cases are considered.

The incidence of burn is higher in India than in Western countries. In India the rural population is affected more than the urban population this may be attributed to various reasons such as use of unguarded domestic heating appliances by putting on floors for cooking, use of open flame equipments, faulty heating and electrical systems, poverty, ignorance, overcrowding and lack of responsibilities.

High incidence has been reported in Delhi because of high population density with greater percentage of population exposed to the electrical hazards, industrial accidents and of course high incidence of household burn due to large population.

INCIDENCE OF AGE AND SEX

Burn is a dreadful condition which spares no age and sex. Injury by the heat source in the form of burn or scalds is inevitable, no sooner one

comes in contact with it. However the incidence of burn in the different age groups and sexes varies considerably. The factors which determine the age and sex incidence of burn injuries are variable in different countries depending upon the local climate and prevailing social customs.

It is obvious from the table no. 3 in observations that the incidence of burn was more in females than males i.e. 480 cases were females and 284 were males out of total 764 patients i.e. 62.82% female patients with male: female ratio is 1: 1.59.

The highest incidence of burn patients was in adult age group if 15-30 years which involved 387 cases out of total 764 cases i.e. 50.65% in which 34.94% were female patients and 15.15% were male patients. This high incidence of female patients in this age group is because they are commonly responsible for cooking the food; the members lack the requiring alertness and experience. Most of these incidences are accidental because of ignorance while cooking and using unsafe fire places, faulty appliances and synthetic Sarees, which catches fire easily and stuck up in the body. In this age group, suicidal and homicidal burns are common due to family disputes and dowry reasons.

The second most common age group was the pediatric age group (0-14 years) involved 193 cases out of 764 burn cases i.e. 25.26%. Out of this pediatric age group (0-14 years), in preschool age group (0-5 years) burn incidence was 10.79% which includes 5.39% male and 5.39% female patients. The preschool age group (0-5 years) is less than that of school going age group (6-14 years) i.e. 14.57%. **Fowler** (1958) found the higher incidences of burn in children owing to the fact that as Indian women do all cooking on the floor; it is easy for child to "Crawl into danger." Scalds were more common in this age group because of accidental spillage of hot water, milk, tea or hot oils.

The incidence of burn was only 18.59% in the age group of 31 to 45 years which further declined to 4.71% in the age group of 46 to 60 years and only 6 cases were reported in the age group of more than 60 years of age i.e. to say that the incidence of burn decreased with the increase in age.

The reason for low incidence of burn patients after the age of 30 years could be due to less involvement in kitchen work and settlement of family life. Above 60 years of age group incidence is 0.8% and mainly accidental because of advanced age and development of poor judgement and poor sensation.

The youngest male was of 2 months and the youngest female was of 3 month of age. The eldest male was of years and the eldest female was of 81 years.

As far as sex incidence is considered **Sudarshan** (1971) from Singapore reported a higher incidence in males, probably due to large number of individual burns, in his series male constitutes the main working population. **Shridhar Rao** (1966) in his series of 91 cases reported male: female to be 2:1 but **Bajpayee et al** (1982) in retrospective studies of 1218 cases found male: female ratio to be 1: 3.4 (if children are excluded), **Gulliani** and **Tyagi** (1988) reported male: female ratio to be 2:3.

In the present study the female patients accounted for 62.82% of total burn patients whereas male patients accounted for 37.18% and male: female ratio was calculated to be 1:1.59. This has been compared with the other series in the following table.

S.N.	Author	Place	Year	Male: Female Ratio
1.	Rao	Warangal	1966	2:1
2.	Chandra Verma	Delhi	1966	2:3
3.	M.M. Modi	Rewa	1972	1:2
4.	Gupta	Jodhpur	1982	1:2
5.	Tiwari	Rewa	1984	1:1.5
6.	Gulliani	Wardha	1988	1:2
7.	Girish Pratap	Rewa	1992	1:4
8.	Sudhir Jain	Rewa	2000	1:2
9.	Madan Mohan Mudgal	Rewa	2002	1.1:1.4
10	N. K. Chahal	Rewa	2004	1:2
11.	Raja Tiwari	Rewa	2007	1:1.65
12.	Present Study	Rewa	2010	1:1.59

In the present study the male: female ratio is 1:1.59 which is similar to the incidence found by **Raja Tiwari** (2007), **Tiwari** (1984), **Girish Pratap** (1992), and **M.M. Mudgal** (2002).

To summarize the burn patients are more common in young age group with females more commonly affected than the males for the reason explained above and the incidence of burn decreases with the increase in age.

Incidence of Burn Cases According to Religion:

In the present study, a comparison between different religious communities was drawn and it was found that majority of patients were Hindus (96.85%) and only 3.14% patients were Muslims. There was no burn case registered from Christians or Sikhs that may be because their population is small in this area.

The higher incidence of cases in Hindu community was chiefly due to the trend of dowry system. The greed of dowry is the biggest cause of homicidal or suicidal burn deaths amongst Hindu females while in Muslims there is no such type of dowry system.

MODE OF BURN INJURY:

In the present study majority of burns (96.20%) were of accidental type. Suicidal burns were 3.27% and homicidal burn was 0.52% recorded. Other workers have also found accidental burn to be the commonest type of burn. **Bajpayee** (1982) found 97% of the cases to be accidental type in his series of 1218 cases. Almost similar observations have been made by **Wintershield** (1960), **Bull** (1971), **Modi** (1972) and **Durilschi** (1980) though the type of accidents varied from country to country and with age and sex.

The authors agrees with the **Bajpayee's** statement that in certain number of cases which were labeled as accidental burns, suicidal or in some cases homicidal burns were the actual cause because of the social stigma of dowry. Burn as a method of suicide has been noted in eastern countries but not in western countries probably because it is a crude method.

SUMMARY AND CONCLUSION

The study includes patients of burns who were admitted through surgical OPD, casualty and referred from other department of SGMH. On admission preliminary enquiries were made regarding name, age, sex, religion, occupation, residence cause, and mode of burn injury. The treatment was initiated by establishing intravenous line. discharge or expired within 7 days were excluded under study.

After reviewing relevant literatures, observations were systematically recorded, critically analyzed and following conclusions were drawn:-

1. The incidence of burn patients admitted in surgical wares was 5.69% (764 out of 13408 cases).
2. The commonest age group affected by burn was 15-30 years second most common was 0-14 years.
3. Maximum number of patients affected by burn injury were females (62.82%). Youngest patient was 3 month female and eldest was 81 years female. Youngest male was 2 months old and eldest male was 82 yrs old.
4. Majority of burn victims were Hindus (96.85%) and 3.14% patients were Muslims.
5. Most of the burn injuries were accidental (96.20%), suicidal burns were (3.27%) and 04 case of homicidal burns was noted.

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