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Research Article

**ANALYSIS AND TREATMENT OUTCOME OF PATIENTS  
WITH ELECTRIC BURN IN PLASTIC SURGERY  
DEPARTMENT OF MAYO HOSPITAL, LAHORE**<sup>1\*</sup>Dr. Javeria Nasim, <sup>2</sup>Dr. Amber Razaq, <sup>2</sup>Dr. Saneea Saleem Quraishi<sup>1</sup>MBBS, Punjab Medical College Faisalabad<sup>2</sup>Services Hospital Lahore**Abstract:**

**Background:** When an electric current passes through the body, interferes with the function of an internal organ, or sometimes burns the tissues, it starts to fruition. From 4% to 6.5% of applications made to incineration units in the United States and about 1000 deaths per year.

**Objective:** To evaluate the epidemiology and outcomes of patients who were referred to Department of Plastic Surgery, Reconstructive and Burn Unit, Mayo Hospital Lahore for electrical burns treatment.

**Study Design:** It is an observational retrospective Hospital based study.

**Place and Duration of Study:** The study was performed in Department of Plastic Surgery, Reconstructive and Burn Unit, Mayo Hospital Lahore for the period of four year from March 2014 to March 2017.

**Patients and Methods:** From March 2014 to March 2017, all age groups, ethnic groups, and patients with electrical burns of the either sex who came to burn center for treatment were included. The data of patients with electric donut stories were collected and analyzed. Using descriptive analysis by SPSS version 12.0. Records with incomplete data were discarded in three or more variants.

**Results:** Of 305 patients, 296 (90.5%) were male and 8 (9.5%) were female. The mean age of the patients injured by electrical burns was  $27.35 \pm 12.38$ . The proportion of age groups most affected by electrical burns was between 22 and 31 years.

**Conclusion:** Burn injuries mainly involve young men between 22 and 31 years of age. Our study found the increasing frequency of patients caught with serious injuries in the following years. When it is thought that such destructive injuries are caused by commonly avoided hazards, preventive strategies need to be adopted.

**Keywords:** Burn centre, electrical burn, incidences, epidemiology.

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**INTRODUCTION:**

A burn is a type of injury to body tissues due to heat, electricity, chemicals, light, radiation, and friction. Burning continues to be one of the fundamental problems that threaten public health in developing countries. Burn injuries are the biggest discomfort of all injuries and a global public health problem. Electrical combustion is a type of thermal injury that has a potentially destructive capacity for functional and aesthetic sequelae. According to a report by the American Society of Burns 2013 deposit, electrical burns accounted for 4.09% of all burn incidences offered to the American Burns Association. From 4% to 6.5% of applications made to incineration units in the United States and about 1000 deaths per year. 130,000 visits to the emergency service are likely to be associated with electrical injuries every year. Approximately 20% of all electrical injuries occur in children and in children with the highest bimodal incidence in adolescents. Most electrical injuries that occur in children are at home with extension cords (60-70%) and electrical outlets (10-15%), the most common source of this age group.

Plastic Surgery, Reconstruction and Burn Unit, Mayo Hospital is one of the largest burning units in the country. Patients from all over Punjab are referred to this Hospital for reconstructive surgery. This study was designed to know the workload and performance of the pavilion and to know the significance of the age group, sex, type of injury, and statistical

significance of the injury pattern in patients suffering from electrical burns. For this reason, develop an evidence base to recognize the population at risk in our configuration and address the problem more effectively.

**PATIENTS AND METHODS:**

This retrospective study was conducted from March 2014 to March 2017 at the Mayo Lahore Hospital Plastic Surgery, Reconstruction and Burn Unit. The title of research and study design has been approved by the Research Directorate. KEMU. From March 2014 to March 2017, we provided a retrospective review of the clinical cases of patients with electrical burns who applied to the Burns Center, Mayo Hospital, Lahore for a 3-year study period. Patient files were taken from the consensus. Survey records are digitized in numerical data. Numerical data were analyzed with SPSS 12.0 version. Both sexes with electrical burns include all age groups (infants, children, adults, and elderly). Missing values in three or more variables are ignored and not all inherited data are displayed. Only exact and valid data are used for the analysis.

**RESULTS:**

Of 305 patients, 296 (90.5%) were male and 9 (9.5%) were female. Figure I shows the wise income of the year, which shows the tendency of electric burns to increase in the years to come.

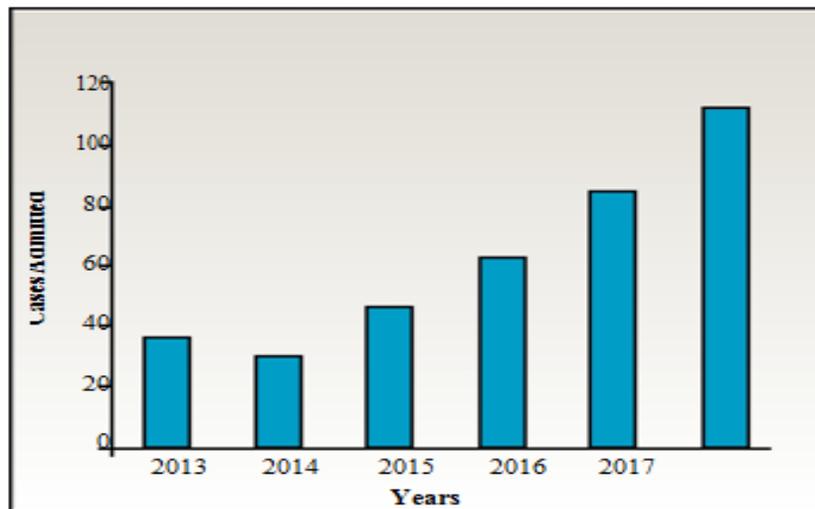


Figure I: Electric Burn Cases Admitted during March, 2013 to March, 2017 (n=305)

Patients were between 1 and 70 years of age. The mean age was  $27.35 \pm 12.38$ . When the most common age groups were examined, the most affected age groups were 21-30 years, followed by the adult age group 11-20 years. The youngest group, less than 10 years old, was the least affected group. The participation of age groups in Table I every year.

Table I: Age groups of electric burn patients (N=305)

Years		Age Groups						
		0-10	11-20	21-30	31-40	41-50	51-60	61-70
2013 (n=36)	%	0	5	23	3	3	2	0
2014 (n=30)	%	0	8	17	4	1	3	0
2015 (n=46)	%	2	13	14	4	7	1	0
2016 (n=63)	%	4	21	16	11	6	0	1
2017 (n=84)	%	5	29	30	10	7	1	2
Total (n=305)		19	107	100	32	31	12	4
Total (%)		5.1%	29%	36.6%	16.7%	8.3%	3.2%	1.1%

Of 305 patients, 296 (90.5%) were male and 9 (9.5%) were female. Male sex participation was significantly higher than female sex. The total male-female ratio observed is approximately 9: 1. Gender participation for each year is described in Table II.

Table II: Gender involved in electric burn injury (n=305)

Year	Number of Patients (N)		Percentage (%)
2013 (n = 36)	Male	38	(97.22)
	Female	1	(2.78)
2014 (n = 30)	Male	40	(96.67)
	Female	1	(3.33)
2015 (n = 46)	Male	43	(93.47)
	Female	3	(6.53)
2016 (n = 63)	Male	95	(87.3)
	Female	1	(12.7)
2017 (n = 84)	Male	80	(86.9)
	Female	3	(13.1)
All Years (n = 305)	Male	296	(90.5)
	Female	9	(9.5)

Burns University, Mayo Hospital, Lahore the results of patients who came with electrical burns, the number of patients with electrical burns, and the elimination mode (LAMA, discharged or overloaded). In Figure II, the screening mode of the room is defined from the obtained valid estimates. Every year lost and missing values were thrown away. According to the analysis, the Burns Center shows that injuries from electrical burns are higher because the burden of Lahore work has increased three times from 36 cases in 2013 to 112 cases in

2015. In addition, the result of the successful treatment of the Burns Center, Lahore, has also increased in the year.

#### DISCUSSION:

Approximately 1000 deaths per year have a mortality rate of 3-5%, depending on the electrical injuries in the United States. 16 Electrical injuries may result in contact with a faulty device or machine, or accidental contact with local cables. or electrical power lines. Electrical injuries are typically divided into high

voltage and low voltage lesions using 500 V or 1000 V as the cutting point. A high morbidity and mortality has been described in 600 V DC damage associated with the "third track" rail contact. In Pakistan, 200-240V, industrial, electrical and high-voltage power lines can be more than 100,000V for typical domestic electricity, general use and high power equipment. We found that the most common age group was between 21 and 30 years, followed by 11 and 20 years, which is consistent with the study in India where the vast majority of patients were admitted to the Hospital and Medical College. Jawaharlal Nehru and Aligarh Muslim Universities were between the ages of 13 and 25, 21% were children and 79% were adults. In addition, both studies in South India and Hong Kong show that the majority of affected people belong to the age group of 25-34 years and 15-34 years, respectively, the male domination. However, a study conducted at the Taleghani Hospital in Iran found that children under 10 years of age and adults aged 10 to 20 years were at high risk of burns. As in other parts of the world in Pakistan, electrical burns are an uncommon accident, but as this work shows, the burning of the burns is a growing danger in Lahore.

Many of these risks can be avoided by using the manufacturer's safety instructions when using electrical equipment. It assists in the prevention of electric injuries both at home and at work, ensuring that all electrical equipment is properly designed, installed and maintained. An electric shock when touching an electrical outlet at home or on a small device is hardly serious, but accidental exposure to a high voltage current causes many deaths each year, which is why public awareness and education are created in this regard. especially important. For this reason, it appears to be the most effective way to control health problems associated with electrical burns to reduce the risk of injury from accidental burns. This can also prevent high-voltage injuries that are common in Lahore residents. Burn injuries in Pakistan are very common and can happen anywhere and anytime. In recent years, the incidence of electrical burns has increased so much in the Lahore population that electrical burns have been a significant cause of death in Lahore. This can be attributed to the lack of electricity in the city and the Lahore gecekondale, which goes from high-voltage cables passing through the poles in various areas to electricity theft. These high-voltage injuries come from a conductive object that contacts a high-voltage overhead line. In Pakistan, electricity is dissipated and transmitted by bare copper conductors isolated by air. If this air is breached by a driver (for example, an aluminum pole, an antenna, an iron hook, etc.),

anyone touching the driver can be injured. For this reason, the incidence could be reduced in the near future if the electricity supply was better in the city. For this reason, these individuals should be taken into account, particularly in terms of the incidence of electrical burns, and occasionally morbidity and mortality can be reduced by creating awareness, including the presence of unsafe electrical resources (such as hanging wires, broken poles) and careful treatment and removal. Exposure to electrical exposure of affected people is a very common occurrence for certain occupations. The survey shows that electrician has experienced an electric shock at ninety-seven percent; 2.5% reported that they lost consciousness due to an electric shock. People working in professions such as public service and construction workers are at greater risk than the general population. In addition, those who participate in outdoor activities (eg, campers, watchdogs, military personnel) are at greater risk of general population. While a person with high voltage electrical impairment who is exposed to severe burns may seek urgent medical attention, it is not possible for many to suffer from small shocks. For example, a survey of electricians found that medical care is usually explored only when there is unconsciousness, severe burns, or fractures.

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