**PAKISTANI EXPERIENCE OF CHILDHOOD BURNS IN A PRIVATE SETUP**

Ahmad M.

Plastic, Reconstructive, Hand & Hair Restorative Surgeon, Aesthetic Plastic Surgery, Rawalpindi, Pakistan

**SUMMARY.** Burns are the second leading cause of death in children. This study investigates the distribution and pattern of childhood burn injuries in a private setup. The study was conducted in Rawalpindi, Pakistan from January 2006 to December 2008. Only paediatric patients ≤ 12 years of age were included in the study. All paediatric burn patients (in- as well as out-patients) were included. A total of 44 patients were included (male-to-female ratio, 1.3 to 1) with 2.3% patients aged 1-3 years, 13.6% aged 4-6, 38.6% aged 7-9, and 45.5% aged 10-12. The mean age was 9.16 yr in males and 8.37 yr in females. Scald burns were the commonest kind of burn (43.2%), followed by flame burns (18.2%). In 6.8% of the patients, the burns were superficial, in 20.5% they were deep, and in 72.7% they were mixed. The majority of the patients had involvement of the hand with or without the forearm (47.7%). The mean hospital stay was 17.5 days. There was one mortality during the study period.

**Introduction**

Burns are the second leading cause of death in children under the age of five and the commonest cause of accidental deaths in the home setting. In recent years, there has been an increase in the attention directed at the epidemiology of childhood injuries, although some studies have reported that in certain societies females may be at a higher risk because of their involvement in domestic activities near open fires and because of clothing styles. The poor outcome in surviving burn victims, due to scar formation, contractures, deformities, and functional limitations, result in a poor quality of life. The long period of painful scar treatment comes with a significant functional burden for patients and society alike.

Various studies of burn patients have been carried out in Pakistan on adult patients, but they were conducted in the centers funded by the government - none has been conducted in a private setup.

The present study investigates the characteristics and pattern of childhood burn injuries in Pakistan in a private setup.

**Patients and methods**

This epidemiological study was conducted in a private setup (Aesthetic Plastic Surgery) in Rawalpindi, Pakistan, from January 2006 to December 2008. Only paediatric patients ≤ 12 years of age were included in the study. All the paediatric burn patients (in-patients as well as out-patients) were included. Information regarding age, sex, aetiology, areas and total body surface area (TBSA) involved, depth (superficial or deep), and duration of hospital stay were recorded. Wound swab cultures were performed on admission.

In all the patients, the standard protocols of Airway, Breathing, Circulation were observed. Broad-spectrum intravenous antibiotics were started. All the burn wounds were thoroughly washed with normal saline under sedation/general anaesthesia, and occlusive dressing was applied using 2% silver sulphadiazine. The dressings were changed regularly once daily. The deep burns and any slough were removed surgically. The superficial burns were left for secondary healing whereas deeper burns were skingrafted.

**Results**

**Age and sex**

A total of 44 patients (25 males, 19 females) were included in the study (male-to-female ratio: 1.3 to 1; 2.3% of the patients were aged 1-3 yr, 13.6% were aged 4-6 yr, 38.6% 7-9 yr, and 45.5% 10-12 yr). The mean age was 9.16 yr in males (range, 5-12 yr) and 8.37 yr in females (range 3-12 yr).

**Type of burn**

Scalds (43.2%) were the commonest cause of burns, followed by flash burns (18.2%). Among the scalds, hot oil was predominant (Table I).

**Severity of burns (extent and depth)**

The majority of patients (72.2%) had superficial to deep second-degree burns; 20.5% of the patients had deep third-degree burns and 6.8% had superficial burns. (In many
The micro-organisms cultivated in the wound-swab cultures included *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Klebsiella* species, *E. coli*, *Streptococcus pyogenes*, and methicillin-resistant *Staphylococcus aureus* (MRSA) (Fig. 2).

**Location of accident**

The highest proportion of burns (45%) occurred in domestic settings, including the living-room, kitchen, lawn, bathroom, etc. (Fig. 1).

**Hospitalization**

The mean hospital stay was 16.9 days (range, 8-27 days).
In the present study, males were more involved than females (56.8% vs 43.2%), which is in accordance with other studies. This higher male incidence may be due to the greater activity of male children in this age group. Scalds accounted for 43.2% of the cases, followed by flash burns, similarly to Amico et al.

The majority of the patients had burns involving the limbs (upper limbs, 47.7%; lower limbs, 43.2%). The face was involved in 9.1% of the patients. Burns in the lower abdomen and legs are a likely reflection of ease of access to the cooking pots, kettles, and heating equipment often found on the floor or tables. The use of these pots with portable kerosene and gas stoves has been associated in other studies with childhood burn injuries.

Specific aspects of home design and structure, such as the lack of a clear demarcation of cooking and washing areas, have also been linked to burn injuries. It was found that 53.8% of the patients proved positive in *Staphylococcus aureus* wound swab cultures, while the Gram-negative bacilli rate was 46.2%. MRSA was seen in only one case. There was one mortality during the study period in a patient with electrical burns who succumbed a few hours after resuscitation.

### Conclusion

This study identified specific patterns and risk factors of paediatric burns in Pakistan. Burn prevention efforts should be directed towards mitigating these risk factors as well as educating parents.

---

RÉSUMÉ. Les brûlures sont la deuxième cause principale de la mort en âge pédiatrique. L’auteur de cette étude s’est proposé de considérer la distribution et les modalités des brûlures traitées dans un service privé à Rawalpindi (Pakistan) pendant la période janvier 2006/décembre 2008. Seulement les patients d’âge pédiatrique jusqu’à 12 ans ont été admis à l’étude. Tous les patients pédiatriques, en régime soit hospitalier qu’externe, ont été inclus, c’est-à-dire 44 patients (rapport mâles/femelles, 1,3:1), dont 2,3% étaient âgés d’un an à 3 ans, 13,6% de 4 à 6 ans, 38,6% de 7 à 9 ans et 45,5% de 10 à 12 ans. L’âge moyen des garçons était 9,16 ns et des jeunes filles 8,37 ans. La cause la plus commune des brûlures était l’ébouillantement (43,2%), suivi par les flammes (18,2%). Chez 6,8% des patients les brûlures étaient superficielles, chez 20,5% elles étaient profondes et dans 72,7% elles étaient de type mixte. Dans la plupart des cas la main était intéressée, avec ou sans l’avant-bras (47,7%). La durée moyenne de l’hospitalisation était de 17,5 jours. Une seule mortalité s’est vérifiée pendant l’étude.

### BIBLIOGRAPHY


This paper was received on 15 July 2008.

Address correspondence to: Dr Muhammad Ahmad, H. No. D-28, Block 6, Shah Faisal Colony, Airport Link Road, Rawalpindi 46200, Pakistan.

E-mail: plasticsurgeon999@yahoo.com