

## Editorial

### Acid Attack Injuries

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#### Introduction

Perpetrators of these attacks throw corrosive liquids at their victims, usually at their faces, burning them, and damaging skin tissue, often exposing and sometimes dissolving the bones. Acid attacks can lead to permanent, partial, or complete blindness.

#### Treatments of Patient with Burns

##### 1-First Aid

Patient should be kept in a closed warm room and treated confidently.

(a) **Burns and Scalds:** Keep the patient away from heat and flames. Apply cold clean water soaks to the affected areas every 3 minutes.

(b) **Electrical Burns:** Switch of electrical supply. Move the patient to hospital.

(c) **Chemical Burns:** Irrigate affected areas with clean water (for Phenol burns polyethylene glycol should be used instead of water).

(d) **Respiratory Tract:** Humidified oxygen by mask is given. Aminophylline is Burns given if there is bronchospasm.

##### 2-Transport

Patient should be covered with clean sheet and wrapped in warm blanket and moved to the hospital with care.

#### 3-Severity of Injury

Patients with burns more than 10% body surface area in children and 15% in adults need intravenous resuscitation.

**Adults :** The Rule of Nine of Wallace may be used to assess burn area for

- 9% for head and neck
- 9% for each upper limb
- 9% for each lower limb (front)
- 9% for each lower limb (back)



(NOTE....Patients own hand (one side) is a useful guide as it is equal to 1%.)

(b) In a child aged 1 the head and neck area is 18% and in a child aged 5 is 13% of the total body area

**4-Depth of Burn**

(a) **Partial Thickness Burns** - They look moist, red and blistered. The hair follicles, Epidermis and sweat glands are preserved. Children have delicate skin therefore minor scalds may be full thickness burns.

(b) **Full thickness Burns** - They look white or brown, dry and firm to touch. Wounds caused by burning clothing, electricity or molten metal are usually full thickness burns. Nerve endings are destroyed in full thickness burns and Pin Prick Test is done to see the extent of burn.

First Degree Bur Second Degree Bur Second Degree Burn



**5- Initial Care**

Majority of burn wounds require no cleansing. Adherent clothing, dirt or foreign material should be removed with warm sterile water gently. It is not necessary to rupture clean blisters.

**6- General Evaluation and Treatment**

(a) **Emergency Sedation:** Partial thickness burns are very painful and need sedation. Sedatives should be used with caution as they may cause vomiting or respiratory depression. Trimeprazine tartrate (Vallergan) is sedative of choice for children.

(b) **Fluid Replacement Therapy** - Hypovolaemia is due to losses from burn wound and formation of inflammatory oedema. The volume lost is proportional to the area of the wound. The fluid lost resembles plasma and should be replaced with colloid solutions (e.g. human plasma protein fraction, human albumin 4.5% and Dextrin).

**Adults First 24hrs:** 1 to1.5 liters of colloid are required for every 10% of body surface burnt. Half of this volume is given in the first 8hrs from the time of burning and the other half in next 16hrs.

**Second Day:** About half of the above amounts are required.



**Fourth Degree Burn (Blister)**

**Scald**

**Children First 24hrs:** One plasma volume equivalent (40ml / kg) is required for every 15% of the body surface burnt. Half of this volume is given in the first 8hrs and the other half in next 16hrs.

**Second Day:** About half of these amounts are required.

(b) **Tetanus Prophylaxis:** Tetanus Toxoid booster is given in all cases.

(c) **Antibiotic Therapy:** Antibiotics should be used with great care because they may give rise to resistant and pathogenic organisms.

(d) **Nutritional Support –**

Half strength milk and liquid diet should be given in first 24hrs. A nasogastric tube should be passed in severely burnt cases. Patients with more than 30% burns require high protein and calorie diet in addition to normal diet. Milk, sugar and milk based products are given by the formula of Sutherland:

Adults - Proteins =  $1g \times kg \text{ body weight} + 3g \times \% \text{ burn in 24 hours}$

Children - Children need proteins and calories equal to which they take at this age and weight

### III.

(e) **Physiotherapy:** Regular pulmonary physiotherapy is essential for all patients. Exercise for main muscle groups and joints is very important.

(f) **Psychological Support:** Burn patients may become depressed and encouragement.

(g) **Dressings:**

Most burns should be dressed on alternate days for three weeks allow natural healing of partial thickness areas.

The dressings superficial wounds may be left undisturbed for several days. Ketamine anaesthesia is used for major burn dressings. Skin may be needed for full thickness burns. The skin graft dressings are carried out at two or three days intervals until healing is complete. Oily based ‘tulle’ or water based creams are used for dressings.

Hand burns should be enclosed in polythene bags, elevated and exercised to reduce oedema and restore movements.

(i) **Assessment of Progress** - Clinical examination is done to see the progress of healing of burns. Pulse rate, blood pressure, temperature, skin colour, skin temperature and perfusion are noted regularly. Urine output should be 0.5 – 1 ml /kg per hour at any age. For severe cases it may be necessary to measure the central venous pressure.

## 7- Complications

(a) **Early Complications**

- I. Acute renal failure,
- II. Gastroduodenal ulceration (Curling’s ulcers)

(b) **Late Complications**

- I. Acute Duodenal ulcer
- II. Protein losing enteropathy
- III. Chronic renal failure
- IV. Immune deficiency