BURN

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BURN

There is a coagulative necrosis of tissue caused by heat, cold, electricity, radiation & chemical agent, known as burn –

- Ordinary burn - dry heat
- Scald - moist heat
- Chemical burn - acid / base
- Electric burn - high voltage electric current
- Radiation - x-ray / radiation

- The burn injury results from damage to skin by intensity of heat i.e. temp. of object & duration of contact. The earlier changes in blood vessels & under skin burn, the vessels are dilated as a result they start leaking into surrounding tissue resulting in plasma loss (white hemorrhage), it is serious compare to red hemorrhage. Normally daily insensible loss by skin 15 ml / m2 of body surface / hour to regulate temp. of body according to atmosphere, while in case of burn, skin lost 200 ml / m2 / hr of body surface / hour.

- If burn is sufficiently extensive hypo volumic shock sets very rapidly. The loss of plasma from damage blood vessels is fast during first 8 hours & generally slow down next 16 hours & process of leakage stop at end of 48 hrs. after burn injury.
- Once the skin is burn, it acts like a dead tissue & attracts bacteria resulting in infection. Initially due to white hemorrhage loss there are great disturbance of hemoglobin, serum electrolyte & generalized malnutrition occurs.

Physical Examination –

- Sign of primary shock after few hours of burn.
- Sign of dehydration.
- Oligurea or anuria in extensive burn.
- Sign of septic shock by the end of first week.

Dupuytren's classification of burn –

- **First degree –** it involves only superficial epidermis. In early stage it is very painful with superficial inflammation (redness or erythema). It heals in 3 days.
- **Second degree –** it involves complete epidermis. It is very painful with blisters. it usually heals in 7 days.

- **Third degree –** it involves epidermis & partial dermis. It is painful because nerve ending are totally exposed.
- **Fourth degree –** it involves complete epidermis & dermis (total skin) destruction. It is not painful because nerve endings are destroyed.
- **Fifth degree –** it involves destruction of skin with muscle. In this type complication of burn may be seen like infection, post burn contraction & nerve deformity.
- **Sixth degree –** it involves up to bones. In this type more chance of complication may be seen.

Evaluation of burn – (rule of 9 / Wallace's rule of 9)

Head & neck	9%		= 9%
Each upper extremity	9%	= 9+9	= 18%
Each lower extremity	18%	= 18+18	= 36%
Trunk-front & back	18%	= 18+18	= 36%
Perineal area	01%		=1%

- In case of children the head circumference is greater & lower limbs are short.

Effects of burn -

- **Burn --- release of vasoactive peptides --- altered capillary permeability --- loss of fluid --- decreased cardiac output --- decreased renal blood flow --- altered pulmonary resistance causing pulmonary edema --- infection --- systemic infection response syndrome --- MODS (multiple organ dysfunction syndrome) --- death.**

Site of burn –

- Burn of face, feet & perianal area require special care because of the specialized function of these parts. Burn more than 10% In child & more than 15% in adult likely to produce hypovolumic shock so considered serious while burns over 40% are very serious & over 60% are fatal.

Management –

- A modern management of burn based on concept of preventing burned skin from infection, resorting the circulatory system normal, removal eschar, dead tissue, as possible &skin graft if required.
- Minor burn less than 10% not involving perianal, face, feet areas maybe treated as a OPD patient & treatment include.
- Any antiseptic cream
- Pain relieved by dressing & analgesics.
- Antibiotic

- Burn over 15% may be consider serious & after taking a proper history following management is applied.
- IV Fluids - Parkland formula 4* % of burn * wt. in kg = total fluid for 24 hrs.
- ½ amount of calculated fluid is infused in first 8 hrs. & then remaining ½ amt. of calculated fluid in 16 hrs. rate of IV fluid maintain according to urine output i.e. 30 to 50 ml per hrs in adult while in children 1 ml/kg/hr.
- The choice of IV fluid in management of burn is ringer lactate (RL).

- Oral fluids -
- Escharotomy – BPP (boiled potato pills) dressing is used because BPP prevent formation of eschar.
- Sedation –
- Wound care - closed method - with dressing
- Open method - without dressing
- Antibiotic – cortico-steroid should never used in burn.

Treatment –

- Surgical correction of contracture
- Z plasty / skin grafting
- use of pressure garments.
- Physiotherapy / rehabilitation
- Use of aloe vera, moisturizing cream for itching.


Thank you
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