BURNS

CLASSIFICATION OF BURNS

1-Partial thickness - characterized by varying depth from epidermis (outer layer of skin) to the dermis (middle layer of skin)
a-Superficial - includes only the epidermis
b-Deep - involve entire epidermis and part of the dermis
2-Full thickness - includes destruction of the epidermis and the entire dermis as well as possible damage to the SQ, muscle and bone

SKIN FUNCTIONS

1-Functions of the skin
2-Protection - intact skin is the first line of defense against bacterial and foreign-substance invasion
3-Heat regulation
4-Sensory perception
5-Excretion
6-Vitamin D production
7-Expression - important with body image - fear of disfigurement

STAGES OF BURNS

1-*Hypovolemic state* - begins at the onset of burn and lasts for the first 48 hours - 72 hours, characteristic by
a-Rapid fluid shifts - from the vascular compartments into the interstitial spaces
b-Capillary permeability with burns increases with vasodilation
c-Fluid loss deep in wounds
d-Initially Sodium and H2O
e-Protein loss - hypoproteninemia
f-Hemoconcentration - Hct increases
g-Low blood volume, oliguria
h-Hyponatremia - loss of sodium with fluid
i- Hyperkalemia - damaged cells release K, oliguria
j-Metabolic acidosis

2-*Diuretic Stage* - begins 48 - 72 hours after burn injury: characteristic by
a-Capillary membrane integrity returns
b-Edema fluid shifts back into vessels - blood volume increases
c-Increase in renal blood flow - result in diuresis (unless renal damage)

d-Hemodilution - low Hct, decreased potassium as it moves back into the cell or is excreted in urine with the diuresis
e-Fluid overload can occur due to increased intravascular volume
f-Metabolic acidosis - HCO3 loss in urine, increase in fat metabolism

note
Fluid shifts causes
2. malnutrition
3. anemia - develops from the loss of RBC

Treatment of burn

Three periods of treatment , Emergent, Acute, andRehabilitation:

I. EMERGENT
(first 24-48 hrs) immediate problems,
1- Maintain airway, fluids, analgesia, temperature, wound
2-Assessment:
*objective
*how burn occurred, when
*duration
*type of agent
3-Subjective: all medical information (case history)
*previous medical problems
*size and depth of burn
*age
*body part involved
*mechanism of injury
4-Factors Determining Severity of Burns:
*Size of Burn Depth of Burn
*Age
*Body part effected
*Mechanism of Injury
*Injuries sustained at time of burn
*Duration of contact with burning agentc.
*Size & Depth of Burn
* Mechanism of injury - identify causative agent (Flame, contact, scalds, chemical, electrical)
5- Nursing
*Airway clearance,
*ineffective Fluid volume deficit Fluid volume excess
*Hypothermia

*Infection prevention,
*high risk for Pain (with partial thickness burns)
*Skin integrity, impaired
6-. Interventions:
maintain circulation - fluid resuscitation - crystalloids and colloids
Crystalloids - may be isotonic or hypertonic
1-*Isotonic* - most common are lacted Ringers or NaCl (0.9%) - these do not generate a difference in osmotic pressure between the intravascular and interstitial spaces - subsequently LARGE amounts of fluid are required
2-*Hypertonic salt solutions* create an osmotic pull of fluid from the interstitial space back to the depleted intravascular space (helps decrease the amount of fluid needed during resuscitation. decreases the development of burn tissue edema, pulmonary edema, and CHF)

II. ACUTE PERIOD

*end of emergent period until burns heals
*focus now shifts to care of wounds and prevention of complications.
*Actual range of this phase depends on degree and extent of burn
1- ASSESSMENT:
a-Subjective
*pain and anxiety
b-Objective -
*complete assessment every 8 hours
*observe burn wound and donor sites for skin grafting,
*dietary intake,
*motor ability,
*weight

c-NURSING:
*Skin integrity, impaired
*Infection, high risk for (prevention)
*nutrition
*Pain, acute (with partial thickness burns)
*Fluid Volume deficit
*Hypothermia

Organisms that usually infect burns are:

a. Staphylococcus aureus
b. Pseudomonas Infection is usually the cause of any deterioration

Signs of sepsis:
a. Change in sensorium
b. Fever
c. Tachyapnea
d. Paralytic ileus
e. Abdominal distention
f. Oliguria

Ways to prevent infection:

a. Gowns, masks, gloves
b. Sterile linen
c. Persons with URI should not come in contact with patient

WOUND CARE:

1. Burn wound is unique
2. Burn wound sepsis -
gram +
gram- (pseudomonas),
viruses,
fungal (candida albicans)
3. Nutrition -
collagen primary structure in healing by secondary intention,
need increased protein,
may need double the normal calorie requirements
4. Inadequate blood supply
5. Burn wound disorders:
scarring
contractures
keloids
failure to heal

WOUND CARE PRINCIPLES:

1. GOALS
close wound asap
prevent infection
reduce scarring and contractures
provide for comfort
2. Wound cleaning bed side hydrotherapy tanks tubbing spray table
3. Debridement mechanical surgical enzymatic
4. Topical antibacterial therapy mafenide (sulfonamide) sulfadiazine