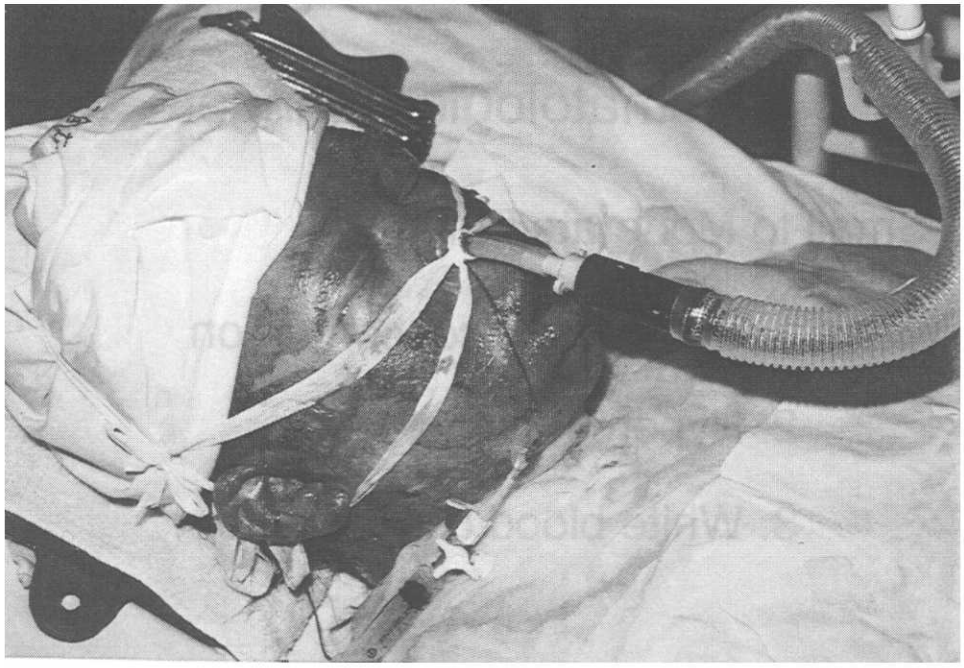

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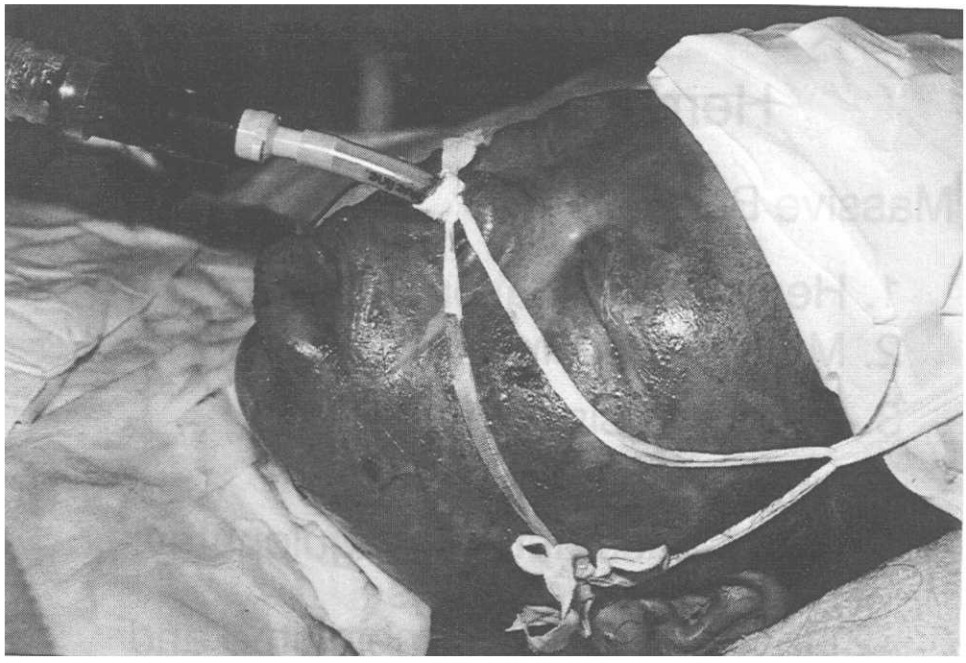

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Hematologic Changes

Small to Moderate Burn

1. Some hemoconcentration
2. Hypercoagulable state
3. White blood cell variable

(Slide 22)

Hematologic Changes

Massive Burn

1. Hemoconcentration
2. May be hemolysis and anemia
3. Leukocytosis with left shift
4. Hypocoagulable State
   from Consumption coagulopathy
   1) Decreased platelets
   2) Increased prothrombin time and
      partial thromboplastin time

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Practical Approach to Treatment

1. What type of fluid to use
2. How much to give
3. What type of vascular access
4. What parameters to monitor
5. When are inotropes required

(Slide 24)

Resuscitation Fluid

Adult, 0 to 24 Hours

1. Lactate Ringer's Solution
   FV= 4ml x Body Weight(kg) x Burn Area(%)
   1/2FV; in first 8 hours
   1/4FV; in second 8 hours
   1/4FV; in third 8 hours

2. Colloids (FFP, PPF)
   0.5ml x BW(kg) x BA(%)
   at 6 hours after injury

(monitor: Urine output, Ht, HR, BP, Tem.)

(Slide 25)

Resuscitation Phase

Adult, after 24 Hours

1. Low salt-high potassium-glucose containing
   120ml/hr

2. Colloids (FFP, PPF)
   20-80ml/hr

(monitor: Urine output, TP, Albumin, Exudate)

(Slide 26)

Resuscitation Fluid

Child, 0 to 24 Hours

1. Lactate Ringer's Solution
   FV= 4-8ml x Body Weight(kg) x Burn Area(%)
   1/2FV; in first 8 hours
   1/4FV; in second 8 hours
   1/4FV; in third 8 hours

2. Colloids (FFP, PPF)
   1ml x BW(kg) x BA(%)
   at 3 hours after injury

(monitor: Urine output, Ht, HR, BP, Tem.)

(Slide 27)

Resuscitation Phase

Child, after 24 Hours

1. Low salt-high potassium-glucose containing
   0-10 kg 100ml x BW(kg)
   10-20 kg 1000ml + 50ml x [BW(kg) - 10]
   >20 kg 1500ml + 30ml x [BW(kg) - 10]
   (Holliday & Segar's equation)

2. Colloids (FFP, PPF)
   20-80ml/hr

(monitor: Urine output, TP, Albumin, Exudate)

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Three Groups of Burned Patients

	n	Age (m±SD)	% Burn Area (m±SD)	Burn Index (m±SD)	Death
Group I (children)	8	0 ~ 11 years (4.1 ± 4.4)	17 ~ 30% (23.8 ± 4.4)	9 ~ 20 (1.8 ± 5.0)	0
Group II (children)	15	1 ~ 11years (4.2 ± 3.6)	43 ~ 99% (66.0 ± 16.6)	22 ~ 95 (40.1 ± 20.4)	1
Group III (adults)	10	26 ~ 78 years (54.5 ± 18.7)	40 ~ 93% (66.2 ± 21.0)	23 ~ 90 (52.7 ± 23.0)	4

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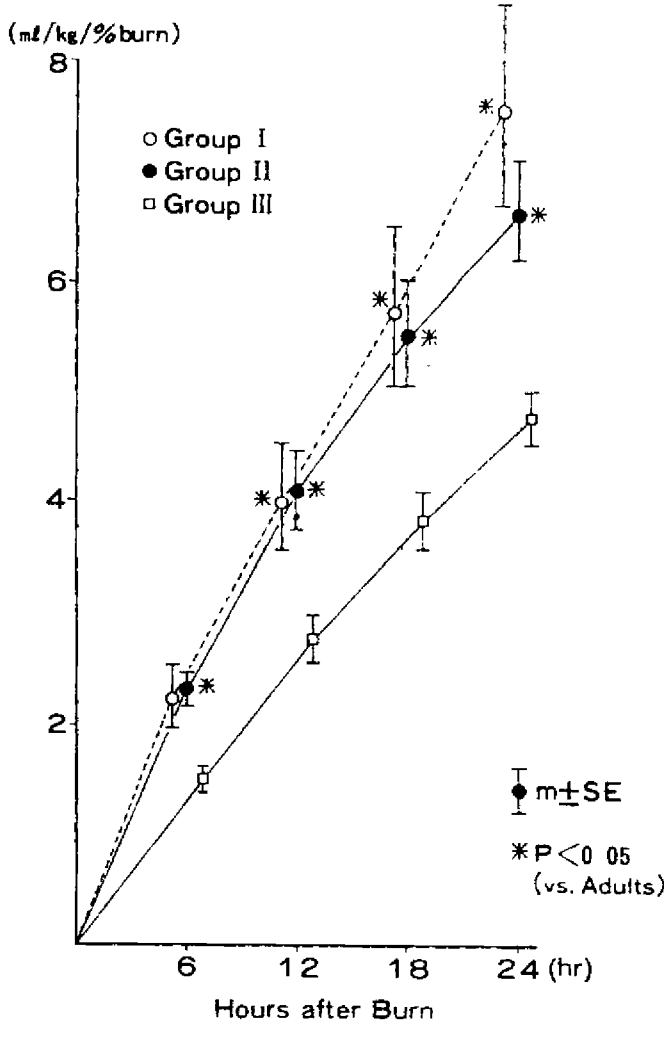
Total Fluid Volume



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Intravenous Access

First choice: Peripheral vein; nonburn area

Second choice: Central vein; nonburn area

Third choice: Peripheral vein; burn area

Worst choice: Central vein; burn area

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Monitoring Guidelines

1. Blood pressure : only reliable as volume indicator if low
2. Pulse rate : young patient-less than 120, reasonable perfusion; more than 130, need more fluid
3. Urine output : 0.5 to 1.0 ml/kg/hr is adequate
   Exception : myoglobin or hemoglobinuria
4. Electrocardiogram : particularly important for patient more than 45 years old
5. Temperature : to avoid hypothermia(large burn), to avoid hyperthermia(small to moderate II degree)
6. Blood gases : high risk of hypoxemia, hypercapnia due to direct pulmonary complication
7. Pulmonary artery wedge pressure : for high risk patient

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Postresuscitation Phase

after 48 Hours

1. Use low salt-glucose containing
2. Add increased amounts potassium
3. Add nutrients: glucose, amino acids, lipid
4. Maintain albumin above 2.5 g/dl
5. Maintain adequate red blood cell(Ht ⩾ 30)

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Initial Assessment of Airway

Stridor Retraction, Respiratory Distress
Pao_2<60 $Paco_2$>55, Deep Burns; Face, Neck

Present

1. Intubate now
2. Use adequate sized tube
3. Humidified oxygen
4. Transport to ICU or burn center
5. Elevate head

Absent

Look for Signs of Airway Injury
1. Oropharyngeal erythema
2. Hoarseness, changing pulmonary status

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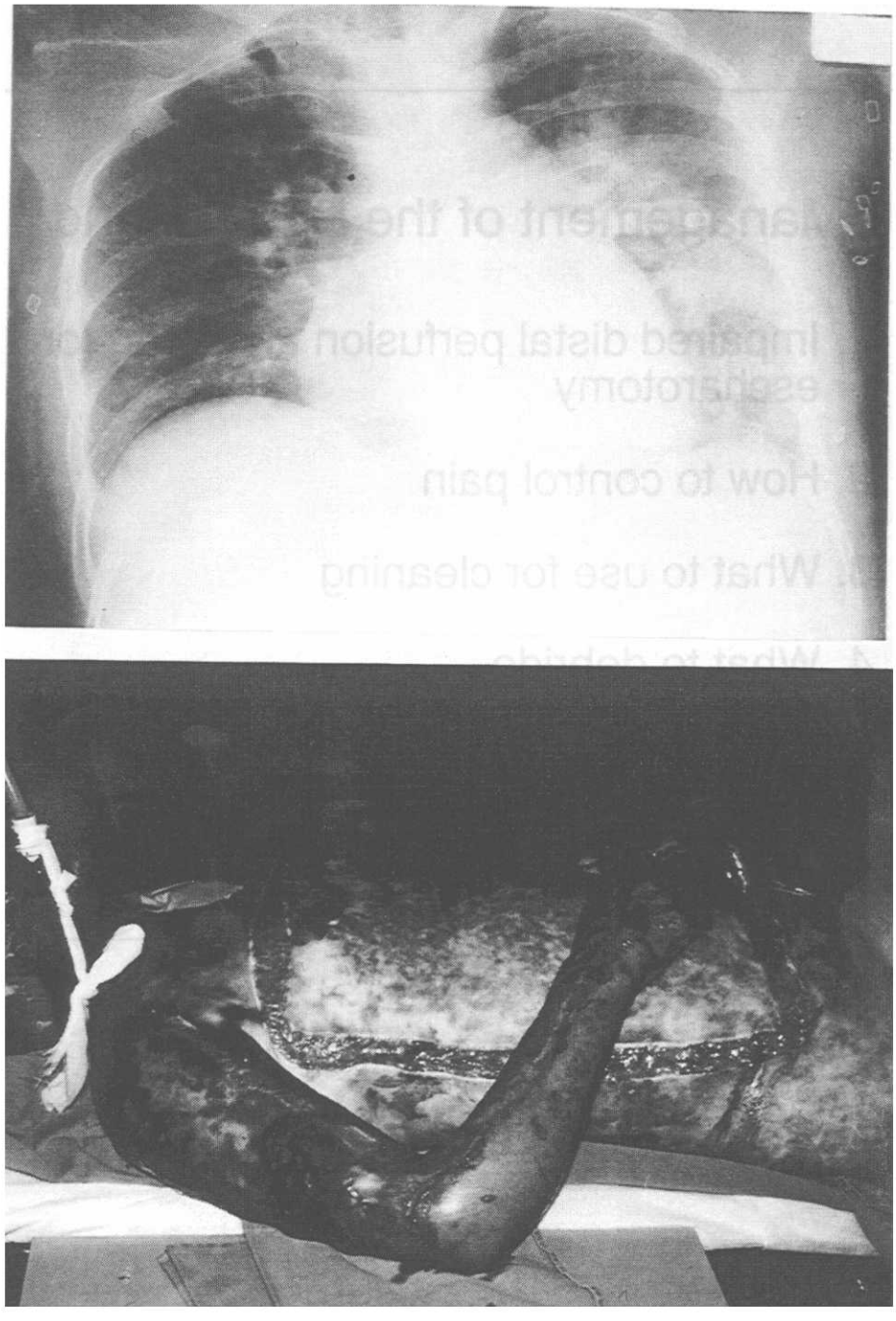
(Slide 35)



Management of the Burn wound

1. Impaired distal perfusion and need for escharotomy
2. How to control pain
3. What to use for cleaning
4. What to debride
5. Where to clean: bed bath versus hydrotherapy

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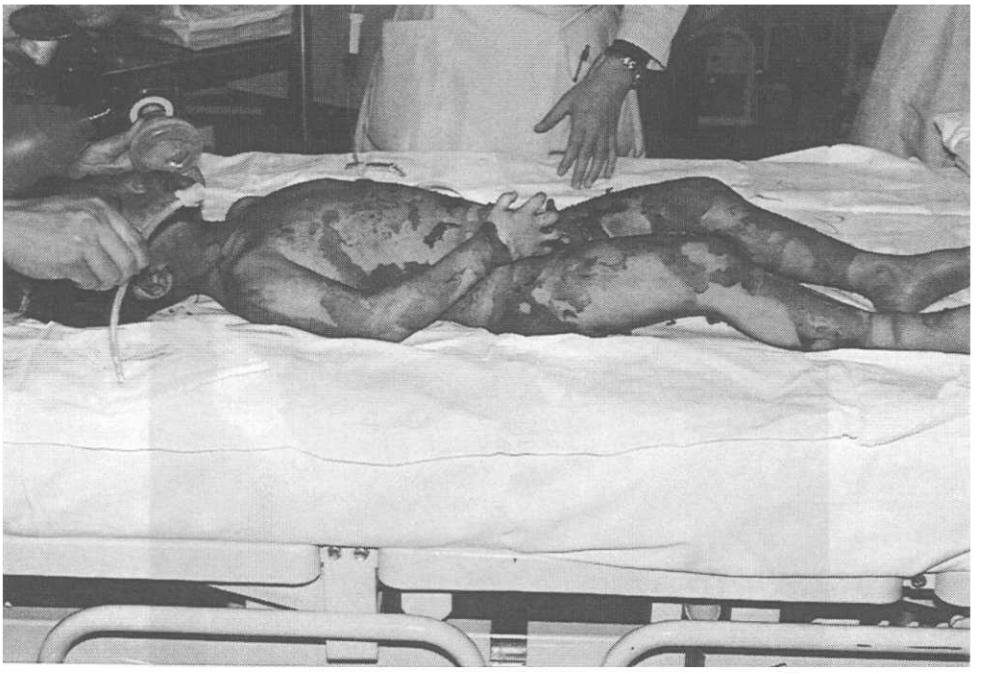

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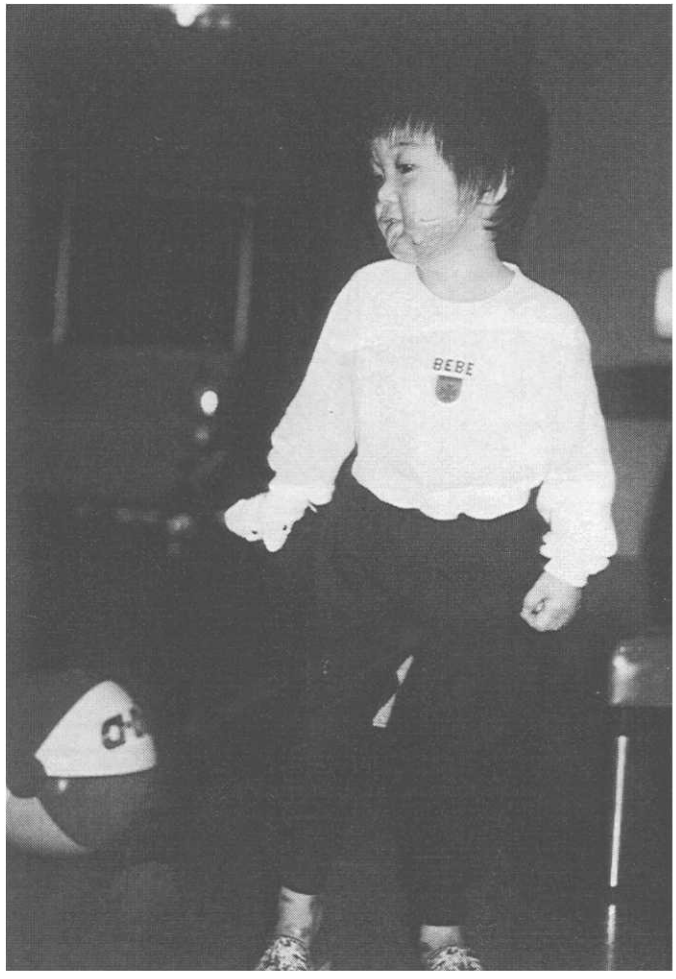

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Inflammation-Infection Phase

1. Maintain adequate nutrition
   Adequate calories for energy
   Adequate protein to maintain chest wall and diaphragm
2. Control lung infection
   Maintain pulmonary toilet
   Maintain adequate cough
   Minimize airway colonization (infection control measures)
3. Minimize risks for ARDS
   Control potential foci of infection
   Avoid pulmonary edema
   Avoid additional insult of pneumonia

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MATERIALS

	SURVIVORS	NONSURVIVORS
NUMBER	26	9
with inhalation injury	7	5
without inhalation injury	19	4
AGE	35.2 ± 24.7 Y (4m ~ 83y)	52.7 ± 22.2 Y (20y ~ 87y)
TOTAL BURNED AREA	53.2 ± 21.6 % (20 ~ 95 %)	59.1 ± 24.0 % (15 ~ 93 %)

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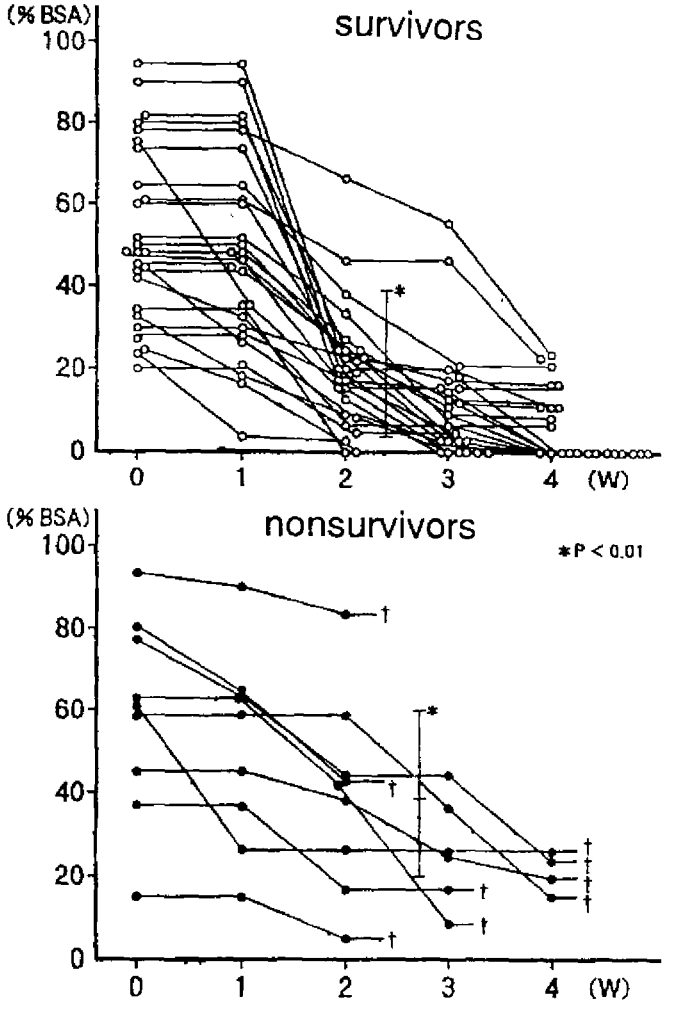
Residual Burn Areas



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Infection control

Topical Antibiotics

1. Absolute indication
   A deep second or third degree burn
   A superficial dirty burn
   A superficial burn in an area at high risk for infection
2. Relative indication
   A large superficial second degree burn > 20%
   A superficial burn in a diabetic, elderly patient
3. Not necessary
   Superficial burn < 15%

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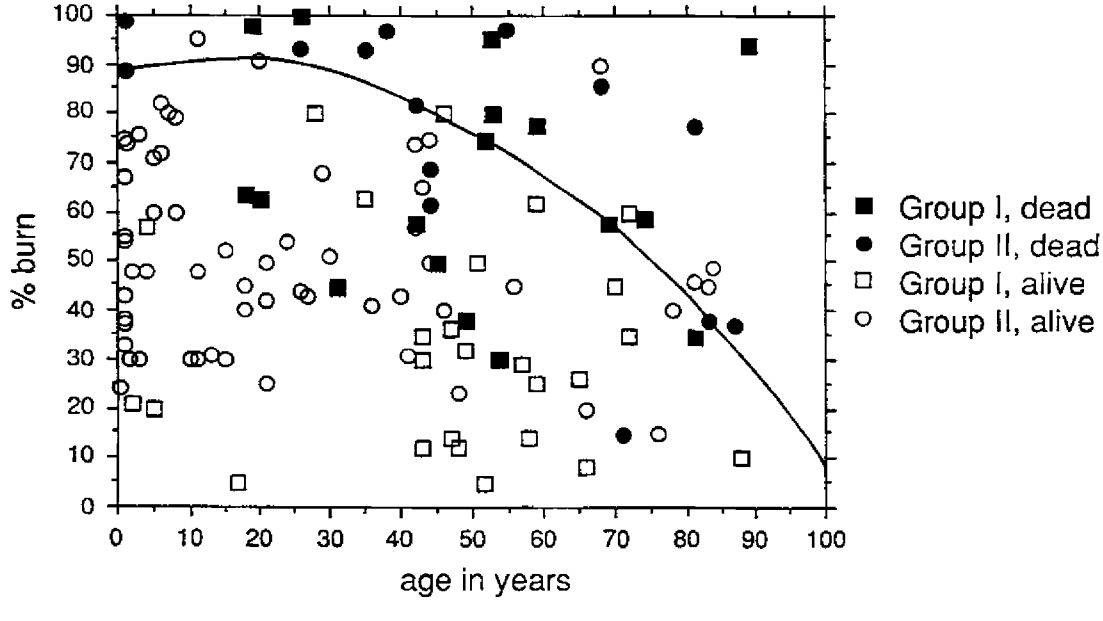
Outcome of patients in each group



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