

PRESCRIBER'S ORDERS INTENSIVE CARE UNIT SEVERE BURN PATIENTS (OVER 20%TBSA)

DATE ___/___/___ TIME ___:___ HOURS
DD MMM YYYY

WEIGHT _____ kilograms HEIGHT _____ centimetres ALLERGY CAUTION SHEET REVIEWED

Pharmacy Use Only WRITE FIRMLY WITH A BALLPOINT PEN Noted by RN/UC

ATTENDING PHYSICIANS

Intensivist _____ Plastic Surgeon _____

Plastic Surgeon on call notified at time ___ : ___ hours (hr)

INJURY INFORMATION

% Total Body Surface Area (TBSA) burn _____

Type of burn _____ (see burn diagram for additional details)

Other injuries (list): _____

Injury time ___:___ hr

Prehospital resuscitation fluid volume _____ millilitres (mL)

MAINTENANCE FLUIDS

Maintenance fluid rate _____ mL/hr (75% maintenance)

D10W / 0.9% NaCl for weight less than 5 kilograms (kg)

D5W / 0.9% NaCl for weight at or above 5 kg

MONITORING PARAMETERS AND OXYGEN THERAPY

Heart rate less than 170 (see Age Related Vital Signs on reverse for range)

Mean arterial pressure greater than 55 mmHg (see Recommendations for Hypotension on reverse prior to treatment)

Oxygen saturation greater than 92%

Target urine output 0.5 – 1 mL/kg/hr

Patient temperature 37.5 – 38.5 °Celsius

CENTRAL VENOUS MONITORING LINES

Add Heparin 2 units/mL to central line fluid if no other fluids running through lumen

0.9% NaCl at 1 mL/hr for weight less than 20 kg

0.9% NaCl at 2 mL/hr for weight at or above 20 kg

ARTERIAL MONITORING LINES

0.9% NaCl with Heparin 2 units/mL at 1 mL/hr for weight less than 20 kg

0.9% NaCl with Heparin 2 units/mL at 2 mL/hr for weight at or above 20 kg

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INITIAL RESUSCITATION FLUID CALCULATIONS (TIME ZERO IS TIME OF INJURY)

- (Patient weight) x (% TBSA) x (3 mL/kg/%TBSA) = Total resuscitation fluid volume in first 24 hours after injury:
_____ kg x _____ % x 3 mL/kg/%TBSA = _____ mL resuscitation fluid in first 24 hours after injury
- 50% of total resuscitation volume given in first 8 hours after injury:
_____ mL in 24 hours / 2 = _____ mL in first 8 hours after injury
- Adjust for pre-calculation fluid administration:
_____ mL in first 8 hours - _____ mL resuscitation fluid already administered = _____ mL remaining for first 8 hours after injury
- Volume remaining / time remaining in first 8 hours = Initial BCCH resuscitation fluid rate:
_____ mL/(8 - _____ hours since burn) = _____ mL/hr continuous intravenous infusion of Lactated Ringer's
- Adjust rate per Pediatric Burn Resuscitation Protocol guidelines

BURN SPECIFIC MEDICATIONS

- Ascorbic acid 66 mg/kg/hr continuous intravenous infusion (reconstituted in Lactated Ringer's) for 24 hours post injury then discontinue
- Account for ascorbic acid infusion rate as part of the total resuscitation fluid rate calculated above
- Hydroxocobalamin _____ mg (70 mg/kg/dose, maximum dose 5 grams) IV single dose (for all patients with documented or suspected inhalational injury)

ANALGESIA AND SEDATION

- Acetaminophen _____ mg (15 mg/kg/dose) PO/PR/NG/NJ Q6H as needed for comfort
- Morphine 0-40 mcg/kg/hr continuous IV infusion, titrated to maintain MAPS 0
- Morphine bolus _____ mg (0.05 mg/kg/dose) IV Q1H as needed to maintain MAPS 0
- Dexmedetomidine 0 – 0.7 mcg/kg/hr continuous IV infusion, titrated to maintain SBS -1 to 0 and MAPS 0
- Midazolam 0-120 mcg/kg/hour continuous IV infusion, titrated to maintain SBS -1 to 0
- Midazolam bolus _____ mg (0.05 mg/kg/dose) IV Q1H as needed to maintain SBS -1 to 0
- Pain and sedation management per ICU Burn Protocol

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PATIENT CARE

- Enteral feeds with _____ formula at 5 ml/hour via nasogastric tube (start immediately at admission)
- Increase feeds to goal rate _____ ml/hour as tolerated
- Insert nasojejunal tube for continuous feeding within first 24 hours after injury
- Blood product transfusions only after consultation with Plastic surgery and Intensive Care attending physicians
- Burn dressings per plastic surgery
- Elevate burned areas if possible
- Room temperature 25 °Celsius
- Measure and record bladder pressure Q6H – notify physician if rising or greater than 12 millimetres mercury (consider if increasing ventilatory pressures, decreasing urine output or increasing abdominal distension)

INVESTIGATIONS AND BLOODWORK

- Chest xray on admission
- Arterial blood gas, Complete blood count, Sodium, Potassium, Chloride, BUN, Creatinine Q8H for the first 24 hours
- Arterial blood gas, Complete blood count, Sodium, Potassium, Chloride, BUN, Creatinine q12h for the second 24 hours
- Arterial blood gas, Complete blood count, Sodium, Potassium, Chloride, BUN, Creatinine once daily at 0600 subsequently
- Arterial blood gas as needed subsequently

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Age Appropriate Vital Sign Ranges*

Suggested Range of Normal Values					
Age Group	0 days– 3 months	3-12 months	1-4 years	4 yrs – 12 yrs	Over 12 years
HR	110-170	100-150	90-120	70-110	60-100
RR	30-60	25-50	15-40	15-30	12-16
Systolic	60-80	70-100	80-110	80-120	90-130
MAP (lower limit)	45	50	55	60	65

*Modified from Nelson's Textbook of Pediatrics, 17th edition.

Recommendations for Hypotension

Hypotension MUST NOT be defined or acted upon by MAP values alone. It must be correlated with decreased urine output and an overall patient assessment. MAP values below those outlined in the table above are acceptable as long as urine output exceeds 0.5 mL/kg/hr, ScvO₂ greater than 60% and lactate less than 3mmol/L.

Fluid boluses should ONLY be administered for the reversal of acute profound hypotension.

If Mean Arterial Pressure (MAP) is consistently less than the lower limit for age and there is evidence of poor end-organ perfusion (urine output less than 0.5 mL/kg/hr, lactate greater than 3mmol/L, ScvO₂ less than 70%) the following stepwise guide is recommended:

1. Assess Volume Status: If MAP is less than the lower limits outlined above, CVP is less than 5 and urine output is below 0.5 mL/kg/hr, refer to the Burn Resuscitation Algorithm to determine the appropriate increase in resuscitation fluid rate (generally 20%). Continue fluid administration as guided by the Burn Resuscitation Algorithm.
2. If MAP is persistently less than the lower limit for age and resuscitation fluid rate is greater than 2 times the initial calculated rate, consider initiation of Norepinephrine at 0.01-0.05 mcg/kg/min to maintain MAP above the lower limit for age (severe burn patients may require Norepinephrine for vasodilatory shock secondary to a massive systemic inflammatory response).
3. Reassess Patient: If persistently requiring Norepinephrine (0.01-0.05 mcg/kg/min) consider a lower MAP goal as long as urine output exceeds 0.5 mL/kg/hr, ScvO₂ greater than 60% and lactate less than 3mmol/L.
4. Maintain ionized calcium greater than 1mmol/L.