APPROACH TO SERIOUSLY ILL CHILD

Introduction

Management of seriously ill child that is infrequently encountered in Emergency department, is a major challenge to the clinicians. Because of anatomical and physiological difference, they need to adjust therapy, interventions and to select equipments and consumables according to age and weight of particular patient. The structured approach will assist a clinician in ensuring that vital steps are not forgotten to manage seriously ill patients. Prioritizing effective communication and teamwork is critical for successful outcome.

Preparation

- A resuscitation area is available for the patient
- Prepare resuscitation team
- Consider calling for help early in a center that does not have a dedicated team
- Prepare functioning equipments that are organized, tested and placed to be easily accessible
- Use personal protective equipment (PPE) such as gloves, masks, and eye protection

Triage

Red criteria for seriously ill child

Unresponsiveness	
Airway	Stridor, central cyanosis
Breathing	Respiratory distress
Circulation	Weak and fast pulse CRT > 3seconds Heavy bleeding Cold extremities Any two of: lethargy, sunken eyes, very slow skin pinch, drinks poorly
Disability	Active convulsion Altered mental status (confused, restless, continuously irritable or lethargic) with stiff neck, hypothermia or fever Hypoglycaemia (if known)
Others	Any infant <8days old Age <2months and temperature <36 and >39°C High-risk trauma Threatened limb Acute testicular/scrotal pain or priapism Snake bite Poisoning/ingestion or dangerous chemical exposure

PRIMARY ASSESSMENT AND RESUSCITATION (ABCDE)

A: Airway

Assessment

Assess airway patency, airway obstruction, signs of airway edema or smoke inhalation in patients with thermal injury

Look**:** chest and or abdominal movement

Listen: stridor, wheezing, grunting, vocalisations such as crying or talking

Feel: expired air

Resuscitation

- If airway is not patent, then this can be secured by:
  - Basic airway maneuver; a chin lift or jaw thrust +/-
  - use of an airway adjuncts +/-
  - Tracheal intubation / surgical airway (needle/surgical cricothyroidotomy)
- Suction or clear the airway of accumulated blood/ secretions/foreign body if necessary

B: Breathing

Assessment

Look**:** RR, SpO2%, suprasternal or sternal, intercostal, subcostal recession, accessory muscle use, flaring of nostrils, gasping, cyanosis, degree of chest expansion

Listen: breath sounds (reduced, asymmetrical or bronchial breath sounds, silent chest), wheezing

Feel: symmetrical chest movement

Resuscitation

- In the child with inadequate respiratory effort, support either with bag–valve–mask ventilation or intubation and intermittent positive pressure ventilation
- In any child with respiratory difficulty or hypoxia, give high-flow oxygen (flow rate 15 l/min) through a mask with a reservoir bag

C: Circulation

Assessment

Look: mottled, cold, pale skin peripherally, BP

Listen: Heart sounds

Feel: HR, pulse volume, CRT

Resuscitation

if the child is shocked,

- IV access / IO access, take urgent blood samples, especially blood glucose
- IV 0.9% N/S bolus 10ml/kg

D: Disability

Assessment

Posture: hypotonic, stiff

Pupils size and reaction

AVPU (P/U = GCS ≤8)

Resuscitation

- Consider intubation to stabilize the airway in any child with a conscious level of P or U
- If hypoglycemia(<3mmol/L) has been found, treat with a bolus of glucose (2 ml/kg of 10% glucose) followed by IV infusion of 5% glucose (10% in infants)
- If prolonged or recurrent fits present, give IV/IO lorazepam 0.1mg/kg, buccal midazolam 0.5mg/kg or rectal diazepam 0.5mg/kg if no IV access
- Manage raised intracranial pressure if present

E: Exposure assessment

- Temperature
- Rashes and brusing

Post-resuscitation investigations

- Chest radiograph
- Arterial or central venous blood gasses
- Full blood count
- Group and save serum for cross-match
- Sodium, potassium, calcium, urea and creatinine
- Clotting screen
- Blood glucose
- Liver function tests
- Urinalysis, microscopy and culture
- Culture of blood and, if indicated, cerebrospinal fluid
- C-reactive protein or procalcitonin

SECONDARY ASSESSMENT AND EMERGENCY TREATMENT

- It is intended to identify any problems that require emergency treatment.
- It includes;

- focused approach medical history
- clinical examination
- specific investigations

Emergency treatment

- If upper airway obstruction due to severe croup is suspected and give nebulized adrenaline [400 micrograms/kg or 0.4 ml/kg of 1:1000 (maximum 5 ml) nebulized in oxygen]
- If anaphylaxis is suspected, give IM adrenaline 1:1000 (Up to 6 years:150 micrograms or 0.15ml), (6-12years: 300 micrograms or 0.3ml), (>12years:500 micrograms or 0.5ml)
- Give further boluses of fluid to shocked children who have not had a sustained improvement to the first bolus given at resuscitation.
- If sepsis is suspected in shocked children, give IV cefotaxime/ceftriaxone
- If tachyarrhythmia is identified as the cause of shock, deliver synchronous DC shocks at 1J/kg f/b 2J/kg up to a maximum 4J/kg with appropriate sedation and analgesia

Further history

- Developmental and social h/o
- Drug and allergies

STABILISATION

- Re-assess frequently
- Monitor the following;
    - Oxygen saturation
    - CO2 monitoring (if intubated)
    - Pulse rate and rhythm
    - Blood pressure (non-invasive)
    - Urine output
    - Core temperature
    - Arterial pH and gases

TRANSFER TO DEFINITIVE CARE

Use systematic approach, “ACCEPT” method to safe transfer and retrieval

- A: Assessment
- C: Control
- C: Communication
- E: Evaluation
- P: Preparation and packaging
- T: Transportation

Handover

- written record of the child’s history
- vital signs
- therapy
- significant clinical events during transfer
- all the other documents

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