

Project: Ghana Emergency Medicine Collaborative

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Patient care management:

Across the room assessment

Pain management

Basic RSI Protocol

Patient stabilization and transport

Medication administration

“Across the Room” Primary Assessment

- Consists of rapid assessment of:
 - A: Airway: Patent?
 - B: Breathing: Efficient?
 - C: Circulation: Perfusing?
 - D: Deficits in neuro: Awake? Preform and AVPU rating.

Primary Assessment

- Closer assessment of A (C-spine)-B-C-D
- Include C-spine immobilization if any chance of trauma. If unknown, assume trauma and place C-collar.
- A problem with airway must be corrected before moving on to breathing. Breathing must be corrected before moving on to circulation etc.

Secondary Assessment

- Brief assessment, taking about 90 seconds to perform.
 - E: Exposure
 - F: Full set of vital signs.
 - G: give comfort measures; get gadgets (foley, NG, pulse ox, etc).
 - H: Head to toe inspection.
 - I: inspect posterior surface.

“PEARLS” of pediatric triage

- Treat child and parent as one patient; avoid separation.
- Allow child to make as many decisions as possible in order to afford him/her some control.
- Utilize play therapy if possible.
- Inform the child of what will happen, do not give false reassurance.
- Respect the privacy of the child.

“PEARLS” of geriatric triage

- Do not assume confusion is normal. There are many conditions, such as dehydration, that can cause confusion.
- Don't dismiss vague complaints. Elderly will sometimes brush over some problems because they equate them with “getting old”
- Decreased renal perfusion in the elderly may place them at greater risk for drug toxicity.
- When testing skin turgor, test on the lateral cheek. Loss of elasticity may be confused with dehydration.

Red Flags of Triage

- Airway that is compromised
- Breathing patterns that result in extreme effort (retractions, stridor, lack of breath sounds)
- Circulation that is compromised and results in compromised perfusion (color changes, diaphoresis, cool extremities).

Red flags cont.

- Heart rate below 60 and symptomatic or above 120 and symptomatic. Any heart rate <40 and >150.
- Immune compromised patients with a fever.
- Pregnant, bleeding patient with c/o pain and lightheadedness.
- Acute onset of testicular pain.
- Headache, fever and change in mental status.

Pain management

- Definitions of pain:
 - Pain is a sensory experience associated with actual and potential tissue damage as well as physiological response to this damage.
 - Pain is whatever the person experiencing it describes it to be; it exists when the person says it does, as manifested in verbal and non-verbal behavior.
 - Emergency Core Curriculum, 5th ed. P537

Pain management

- Ethical issues
 - Use of placebos
 - Withholding of opioids for fear of addiction.
 - Withholding of opioids for fear of respiratory depression.

Assessment of pain

- The focused survey examines the chief complaint and is done after the primary surveys are completed
- Subjective Data:
 - Pain scale
 - P-Q-R-S-T
 - Pain relief measures attempted at home (include herbal/traditional/homeopathic, etc).
- Objective
 - Inspection of the area of pain complaint
 - Palpation and auscultation of area if appropriate
 - Behavioral responses to pain

Pain measurement tools

- *Insert photos here*

Nonpharmacologic pain management techniques

- **Supportive environment:** give explanations, what to expect next, realistic time.
- **Position of comfort:** includes splinting, immobilization, use of pillows, towel rolls.
- **Cutaneous stimulation:** ice to fractures, sprains. Heat to muscle spasms, COOL IS THE RULE for infiltrated IV sites.
- **Distraction techniques:** music, storytelling, colouring books, etc,
- **Relaxation/breathing techniques**

Pharmacological treatment of pain

- Non-opioid (for mild to moderate pain):
 - Paracetamol e.g. Tylenol
 - NSAIDs e.g. Ibuprofen
- Opioid administration (for moderate to severe pain):
 - Morphine
 - Hydromorphone
 - Fentanyl
- Sedative administration (for alleviation of anxiety, sedation to impair memory, induction of drowsiness):
 - Midazolam
 - Diazepam
 - Propofol (hypnotic sedative)

Pharmacological treatment of pain (cont)

- Adjunctive medications
 - Anti-emetics:
 - Phenothiazines: prochlorperazine maleate (Compazine), promethazine HCL (Phenergan), chlorpromazine HCL (Thorazine).
 - Drugs that depress the vomiting center and block receptors that prevent vomiting.
 - Produce additive CNS depression when used with opioids.
 - Patients should be monitored for potential increase in orthostatic hypotension.

Expected outcomes

- Monitor patient response
- Record all pertinent data:
 - Vital signs, pulse ox
 - Pain scale ratings
 - Physical response to analgesics
- Home instructions:
 - Medication administration
 - Resources (internet, education, booklets, etc)
 - Necessary referrals

Rapid Sequence Intubation

- Indications: Unconscious/Semi-conscious patient that require airway control and protection.
 - Severe respiratory distress
 - Drug overdose with respiratory depression
 - Status asthmaticus
 - Head injuries or GCS <8
 - Unstable cardiac patients (CHF, cardiogenic shock)

Contraindications and alternatives

- Contraindications:
 - Distorted anatomy
 - Obstruction
 - Major facial, laryngeal trauma
 - Angioedema
- Alternatives
 - Attempts may be made to intubate a patient nasally who is awake, using only sedation.

Be prepared before RSI

- Equipment needed:
 - Appropriate RN and intubationist at bedside
 - O2 source, suction, monitor, B-V-M device, intubation equipment, pulse oximetry
 - Alternative airway equipment (laryngeal mask airway, transtracheal jet ventilation, cricothyroidotomy set)
 - Pharmacologic agents (drawn up and labeled in syringes).

Brief history

- Think AMPLE
 - A: Allergies
 - M: Medications
 - P: Past medical history
 - L: Last meal
 - E: Existing circumstances

Basic RSI Protocol

- Preparation and preoxygenation with 100% oxygen for 3 to 5 minutes if possible.
 - If B-V-M is needed to preoxygenate, then use the Sellick maneuver to prevent gastric distention
 - Discuss possibility of adding 4% lidocaine to aerolized treatment in status asthmaticus if awake intubation is to be done
- Premedicate:
 - Lidocaine 1mg/kg IV (prevents ICP rise)
 - Atropine 0.01mg/kg IV (minimum dose: 0.1mg) prevents vagal stimulation of bradycardia.
- Administer sedative hypnotic
- Try to limit stimulation
- Administer neuromuscular blocking agent to produce muscle paralysis.

General RSI Protocol premedication

- Sedation
 - *Preferred* medications
 - Etomidate: 0.2-0.3 mg/kg IVP
 - Midazolam: 0.1 mg/kg IVP
 - Ketamine: 1-2mg/kg IV
 - Propofol: 2mg/kg (check for egg allergy)
- Muscle relaxants/Paralytic agents
 - Succinylcholine 1-1.5 mg/kg IV, 2-4mg/kg IM (use with caution in increased ICP and intraocular pressure)
 - Vecuronium 0.1mg/kg IV (1mg is defasciculating dose, but not for eye or head injuries)
 - Pancuronium 0.1 mg/kg IV

Sellick Maneuver

- Pressure is placed with the index finger and thumb over the cricoid cartilage
- *Insert photo here*

Nursing care in RSI

- After muscle paralysis is achieved and there are no fasciculations, the patient is intubated while utilizing the Sellick maneuver.
- Confirm placement by three methods:
 - Clinically: auscultation and observation
 - End tidal CO₂ detector
 - CXR
- Maintain proper body temperature (post-anesthesia hypothermia may exist)

Nursing Care in RSI

- Observe for possible skin breakdown, pressure points at body prominences.
- Morbidly obese patients need to be turned to the recovery position or sat up to take pressure off the vena cava while supine.
- Placement of an NG/OG tube to decompress the stomach
- Eye lubrication if intubation is thought to be for an extended period of time.

Patient stabilization and transport

- Trauma categories
 - Patients should be taken to a Level One Trauma Center are identified by the American College of Surgeons according to injuries and mechanisms of injury.
 - Non trauma categories: follows guidelines put forth by institution and pertinent governing bodies.

Patient stabilization and transport

- Interhospital transport
 - Each hospital should have a formalized plan for intra- and inter-hospital transport that addresses the following elements: pretransport coordination and communication, transport equipment, accompanying personnel, monitoring during the transport and documentation. The transport plan should be developed by a multidisciplinary team and should be evaluated and refined by the continuous quality improvement process.
 - Am J Crit Care, 1993 May; 2(3): 189-95

Patient stabilization and transport

- Transfer arrangements
 - Responsibility for decision to transfer
 - A&E physician, private attending, surgeon
 - Responsibility for patient care in transit:
 - Referring physician, but may be collaborative
 - Mode of transportation
 - Dependent upon distance, traffic, patient condition
 - Personnel for transport:
 - need to have proper education, training, experience compatible with the patient acuity

Patient stabilization and transport communication

- Before transfer
 - Physician to physician report
 - Primary nurse to receiving charge nurse report
 - Report to transport agency
 - Copies of all documentation, diagnostics to go with pt.
- During transport
 - Communication to referring facility of any changes in patient condition
- After transport
 - Follow up call from transfer agency to referral hospital to inform personnel of the outcome of the transport

Patient stabilization and transport

- Patient care needs:
 - Assure patency of airway
 - Assure breathing and circulatory support accompanies the patient
 - Splint anything that might be broken
 - Control bleeding and address wound care
 - Educate patient and family of transport procedures
 - Assure pain relief measures are available for the patient in transport
 - NGT/OGT and foley if applicable

Medication administration

- Calculate mL's per hour based on ug/kg/min

$$\text{Rate} = \frac{\text{ug} \times \text{kg} \times 60 \text{ (minutes)}}{\text{ug/mL}}$$

Calculate the conversion of pounds to kilograms

$$\text{Lbs}/2.2$$

A math problem

- Brevibloc should be run at 100U/kg/min. Your patient weighs 198 pounds. Brevibloc is mixed as a dilution of 2500mg Brevibloc in a total of 285ml of solution. How fast should it be infused?

Answer

- Convert pounds to KG: $198/2.2 = 90\text{kg}$
- Determine the drug concentration of 1mL
 - $2500\text{mg}/285 = 8.77\text{mg/ml}$
- Determine the number of mcg in 8.77mg
 - $8.77 \times 1000 = 8770\text{mcg/ml}$
- Rate = $\frac{\text{ug} \times \text{kg} \times 60 \text{ (min)}}{\text{ug/mL}}$
 $= (100 \times 90 \times 60) / 8770$
 $= 540,000/8770 = 61.5 \text{ or } 62\text{ml/hr}$

Another math problem

- Dopamine is infusing in a 210 pound patient at 12mcg/kg/min. How many mg/hr will this patient receive?

Answer

- Determine weight in KG $210/2.2 = 95.5$ kg
- Delivery is $12\text{mcg/kg} = 95.5 \times 12 = 1146\text{mcg/min}$
- Determine hourly drug delivery
 - $1146 \text{ mcg/min} \times 60 = 68,760/\text{hr}$
- Determine number of mg from mcg (mcg/1000)
 - $68,760/1000 = 68.760\text{mg}$