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:
  – B: Breathing: Efficient?
  – C: Circulation: Perfusing?
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 preform.
  – 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
  – NAIDS e.g. Buffrin

• 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 a wake, 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 defasiculating 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 fasiculations, the patient is intubated while utilizing the Sellick maneuver.

• Confirm placement by three methods:
  – Clinically: auscultation and observation
  – End tidal C02 detector
  – CXR

• Maintain proper body temperature (post-anesthesia hypothermia my 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
  
  Rate = \( \text{ug} \times \text{kg} \times 60 \text{ (minutes)} \)
  
  \( \text{ug/mL} \)

Calculate the conversion of pounds to kilograms

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 = \(\text{ug} \times \text{kg} \times 60\) (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 pan 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 12mcg/kg = 95.5 x 12 = 1146mcg/min
• Determine hourly drug delivery
  – 1146 mcg/min x 60 = 68,760/hr
• Determine number of mg from mcg (mcg/1000)
  – 68,760/1000 = 68.760mg