

Online Lab B: Pediatric Assessment & Intervention Activity

DUE: Please upload your completed assignment to the Dropbox no later than
Thursday, December 10th at 1200.

Orders/Information: You are a nurse working in the pediatric intensive care unit (PICU). You just arrived for your shift and received report on Jimmy John who is under the care of Dr. George.

Scenario:

Patient: Jimmy John is a 7-year old male recovering from a motor vehicle collision where he sustained a severe closed head injury. He was on the ventilator for 2 weeks. He currently has a tracheostomy and is on room air. He has spontaneous respirations. He responds only to painful stimuli. He receives nutrition via his feeding tube but is currently NPO for an MRI of the head later today. He had a chest tube placed 3 days ago for a pneumothorax. His lung sounds are clear and equal bilaterally. Respirations 40 and HR 120. Active bowel sounds X 4 quadrants. Pulse 2+ for all 4 extremities. Skin warm and dry. Weight = 50 lbs. He has NKDA. Urine output for the past 12 hours = 272 mL.

Physician Orders:

NPO

Bedrest

Chest tube to gravity

Foley catheter to gravity

HME to trach as tolerated

Call for O2 saturation less than 89%

Ceftriaxone 575 mg IVPB every 12 hours

D51/4 NS + 20 mEq KCL/liter at 85 mL/hr

I & O

Keep G Button site clean and closed when not in use

- Are there any physician's orders that you would question and if so, why? (Hmmm.....think about this....and yes, you should have something to list here)

The order that stands out to me is the primary fluid. D51/4 NS + 20 mEq KCL/liter at 85 mL/hr seems a little high in comparison to the maintenance fluid requirement rate. I am unsure of why the physician would order the rate to be so fast when the patient is not really dehydrated. The patient's calculated minimal urine output was 11.37 mL/hr. His urine output in an hour was 22.67mL/hr. (272mL urine total/12 hours). This is concerning to me, as the patient has sustained a head injury and would not want to increase that intracranial pressure or fluid overload him.

- Calculate Jimmy's weight in kilograms 22.7 kg

$$50/2.2=22.73\sim22.7$$

- Calculate maintenance fluid requirements for this patient (show your calculations) 65 mL/hr.

$$10\text{kg} \times 100 = 1,000$$

$$10\text{kg} \times 50 = 500$$

$$2.73\text{kg} \times 20 = 54.6$$

$$1,000 + 500 + 54.6 = 1,554.6\text{ml/day} / 24 \text{ hrs} = 64.78 \sim 65\text{ml/hr}$$

- What amount should you set the "volume to be infused" on the IV pump? (Remember, this is a safety measure...if you don't know how to calculate this, look back at the Assessment and Intervention of the Child powerpoint presentation) 130 mL. **The fluid infusion rate was prescribed too high. So it should be changed to 65 mL/hr. If the physician left it running at 65 mL/hr and not the recommended rate for this patient, the volume would be set at 170 ml. Volume needs to be changed from 170ml to 130ml.**

- Calculate minimal urine output for this patient (show your calculations) 11.37 mL/hr.

$$50 \text{ pounds} / 2.2 \text{ pounds} = 22.73 \text{ kg}$$

0.5 (bc not an infant) * 22.73kg = 11.37

o Is the urine output appropriate for the last 24 hours? **Yes** No

➤ Jimmy has an order for Ceftriaxone 575 mg IVPB every 12 hrs. **The pharmacist has mixed the dose that is due now in 25mL Sodium Chloride 0.9%.** (You will need to use a drug reference when completing the following information.)

o What is the therapeutic range for this medication per the drug reference?

50-75 mg/kg/dose IV or IM every 24 hours. Maximum dose of 2g/dose.

- Calculate the therapeutic range for this medication for the BID dose ordered (show your calculations).

$$75 * 22.7 = 1,702.5 \text{ mg}$$

$$50 * 22.7 = 1,135 \text{ mg}$$

Therapeutic range was 1,135mg-1,702.5.

- Is the dose ordered within your calculated therapeutic range?

Yes. Dose ordered is 1,150 mg. This is between the therapeutic range of 1,135-1702.5 mg.

$$(572 \text{ mg} * 2 \text{ because q12hrs} = 1,150)$$

o What is the recommended concentration per the drug reference?
Recommended concentration is 10 mg/mL to 40 mg/mL.

- Calculate the concentration of the prescribed medication (look above to see how much fluid the pharmacist sent this medication in and show your calculations).

575 mg of ceftriaxone/25 ml sodium chloride= **23mg/mL**.

- Is the prescribed dose within the recommended concentration range?

Yes. The recommended concentration therapeutic range was 10 mg/mL-40mg/mL. 23 mg/mL is within that therapeutic range.