

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)

I would question the D51/4 NS + 20 mEq KCL/liter at 85 mL/hr because the patient weighs 22.7 kg so they require a maintenance fluid of 65 mL/hr. The order is 20 mL/hr more than the patient requires, and the patient had a urine output of 272 mL in 12 hours which is adequate since the child's minimum acceptable urine output would be 136.2 mL in 12 hours. The patient has adequate urine so I would question the order to see why the amount is higher than the patient's requirement.

- Calculate Jimmy's weight in kilograms 22.7 kg
- Calculate maintenance fluid requirements for this patient (show your calculations) 65 mL/hr.

$$10 \text{ kg} \times 100 = 1000$$

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

$$2.7 \text{ kg} \times 20 = 54$$

$$1000 + 500 + 54 = 1554 \text{ mL}/24\text{hr}$$

$$1554 \text{ mL} / 24 \text{ hr} = \mathbf{65 \text{ mL/hr}}$$

- 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) 170 mL unless the physician changes to the maintenance fluid requirement of 65 mL/hr which would make the volume to be infused 130 mL.
- Calculate minimal urine output for this patient (show your calculations) 11.35 mL/hr.

$$50 \text{ lbs} / 2.2 = 22.7 \text{ kg}$$

$$22.7 \text{ kg} \times .5 = 11.35 \text{ mL/hr}$$

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

It's higher than the minimum urine output which would be 136.2 in 12 hours.

- 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 to 75 mg/kg/dose IV or IM every 24 hours. A maximum dose of 2 g/dose.

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

$$50 \times 22.7 = 1135 \text{ mg}$$

$$75 \times 22.7 = 1702.5 \text{ mg}$$

$$1135\text{-}1702.5 \text{ mg/dose}$$

- Is the dose ordered within your calculated therapeutic range?

$$575 \text{ mg} \times 2 = 1150 \text{ mg}$$

Yes, because the dose ordered is 1150 mg which falls between 1135 mg and 1702.5 mg.

- o What is the recommended concentration per the drug reference?

The 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).

$$575 \text{ mg} / 25 \text{ mL} = \mathbf{23 \text{ mg/mL}}$$

- Is the prescribed dose within the recommended concentration range?

Yes 23 mg/mL fall between 10 mg/mL to 40 mg/mL.