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Online Lab B: Pediatric Assessment & Intervention Activity

DUE: Please upload your completed assignment to the Dropbox no later than Thursday, February 25th 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 use of KCL in the patient's IV fluid. The normal range for the 7yr old patient heart rate is 70-110; his is at 120. The normal respiratory rate for his age is 18-22, and his rate is 40. His heart rate and respiratory rate are already too high. The additional KCL could result in detrimental effects for the child. Another thing I would question would be the reasoning behind the use of Ceftriaxone; I'm curious if it is being used and a prophylaxis medication to prevent the patient from getting an infection.

- Calculate Jimmy's weight in kilograms 22.7 kg
 - o $50/2.2 = 22.72$

- Calculate maintenance fluid requirements for this patient (show your calculations) 65 mL/hr.
 - o $10\text{kg} \times 100 = 1000$ $10\text{kg} \times 50 = 500$ $2.7\text{kg} \times 20 = 54$
 - $1000 + 500 + 54 = 1554 \text{ mL}/24$
 - $1554 / 24 = 64.75$ (round up to 65 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 lecture presentation) 170 mL
 - o Order is 85 mL/hr: $85 \times 2 =$

- Calculate minimal urine output for this patient (show your calculations) 11.35 mL/hr.
 - o $0.5 / 22.7 \text{ kg/hr}$

o $.5 \times 22.7 = 11.35$

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

▪ $272/12 = 22.6 \text{ mL/hr}$

➤ 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 of body weight in 24 hours as a single dose or in equally divided doses every 12 hours. Do not exceed a total dose of 2 gm in 24 hours.

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

• $\text{Min} = 50\text{mg} \times 22.7 \text{ kg} = 1135$

$\text{Max} = 75 \times 22.7 \text{ kg} = 1702.5$

• Is the dose ordered within your calculated therapeutic range? **Yes 1,150 falls in-between the range of 1135-1702.5**

What is the recommended concentration per the drug reference?

50-100 mL of NS or D5W

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

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

Is the prescribed dose within the recommended concentration range?

Yes, because medication math PowerPoint states; "Even though the medication reference states a dose of ceftriaxone must be mixed in 50 to 100 mL, it can be mixed in less fluid if the concentration falls between 10 to 40 mg/mL"