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 ceftriaxone doesn't have orders for how much solution it is going to be diluted into.

The minimum fluid requirements is 64.75ml/hour. I believe the rate of 85ml/hr is high. It doesn't seem necessary to me for it to be that high because the patient seems well hydrated due to that fact that his urine output is where it should be at 272ml in 12 hours. The minimum amount for his age at 12 hours is 136.2ml. There is also concern that he may be getting fluid overloaded, because his HR and RR are higher than normal limits.

➢ Calculate Jimmy's weight in kilograms __22.7____ kg

➢ Calculate maintenance fluid requirements for this patient (show your calculations) _____65_____ mL/hr.

Pts weight is 22.7kg..

---so first the first ten we will multiply x100... 10x100 =1000
---for the next 10 we will multiply x50............ 10x50 =500
---for the remaining we will multiply x20........ 2.7x50 =54

Then you add this total together to get 1554ml/24hr
---so to get how many ml/1 hr I will divide
--- 1554ml/24 = 64.75ml/hr which I will round up to 65ml/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

I am using the 65ml here and not the ordered 85ml

➢ Calculate minimal urine output for this patient (show your calculations) ____11.35__ mL/hr.

o   Is the urine output appropriate for the last 24 hours?   Yes   <mark>No</mark>

   ▪   It is okay because it meets the minimum required, but it almost doubles how much he should be giving out which could indicate overhydration.

➢ 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?

   50-75mg/kg/day BID given every 12 hours. No more than 2gm/day.

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

   50mg x22.7kg = 1135mg/day

   Divide this by 2 since it will be given every 12 hrs

   1135/2 = 567.5mg every 12 hrs

   75mg x 22.7kg = 1702.5mg/day

   Divide this as well by 2 to get the dose given every 12 hrs.

   1589/2 =851.3mg every 12 hrs

   SO... <mark>567.5mg-851.3mg</mark> BID every 12 hrs would be the therapeutic range.

- Is the dose ordered within your calculated therapeutic range?

  Yes it is, because the dose ordered is 575mg every 12 hrs.

o What is the recommended concentration per the drug reference?

  10-40mg/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).

    Our medication is 575mg in 25ml of solution. So to figure out how many mg are in 1 ml of solution I am going to divide 575/25

    575/25 = 23mg/1ml

- Is the prescribed dose within the recommended concentration range?
  o Yes it is.