Q 5

Heparin Drip Administration

Hello my name is _____. This is the **Heparin Drip Administration** station. Your patient is on a heparin drip as part of his medical therapy. Here are the MD orders and the current PTT result. You are to determine if titration of the drip is necessary, and, if so, to calculate the new rate and amount of units per hour that the patient is to receive. In addition, you will set the pump to the new rate. The answer sheet is here. You may also use this sheet as scratch paper. You may use a calculator. You have already washed your hands, looked up the medication in your drug book, and explained what you are going to do to the patient. You have 5 minutes to complete this station. What time does your watch say?

START TIME _____ Please tell me when you have completed all the critical elements for this station.

END TIME _____

1. Uses PTT to determine if titration/calculation is necessary.
2. **Identifies** client (**comparing** name and number to name band).
3. Calculates correct number units of heparin the patient will receive at the new rate, if rate change is necessary.
4. Calculates correct rate and sets IV pump, if rate change is necessary.
5. Writes legibly.
6 "Have you completed all the critical elements for this procedure?" (? Asked)
7. Met time limit

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Q5

Neurological Assessment

Hello my name is _____. This is the **Neurological Assessment** station. Your patient was admitted with a CVA. You are to complete a brief neuro assessment of the patient using a modified Glasgow Coma Scale. Supplies you might need are here. The neuro observation sheet is here. You have already washed your hands and explained what you are going to do to the patient. You have already completed and documented the vital signs portion of the neuro observation sheet. You have 5 minutes to complete this station. What time does your watch say?

START TIME _____ Please tell me when you have completed all the critical elements for this station.

END TIME _____

1. **Identifies** client (**comparing** written name and number to nameband).

2. Checks pupil for size and reaction.

3. Repeats pupil assessment for opposite pupil.

4. Determines level of consciousness based on opening eyes.

5. Determines best verbal response.

6. Determines best motor response.

7. Assesses bilateral arm strength.

8. Assesses bilateral leg strength.

9. Maintains patient privacy.

10. Documents each assessment accurately on neuro assessment sheet.

11. Have you completed all the critical elements for this procedure ? (? Asked)

12. Met time limit.

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Name _____

Scenario #1

The patient has a dopamine drip running (**Dopamine 500mg in 500ml of D5W**). The client weighs 165 lbs.

Initially, the client was receiving 5 microgram/kg/min. Based on the patient's response it is now necessary to increase the dose to 25 micrograms/kg/min. How many ml/hr will the client receive now? Set the IV pump to the appropriate rate.

Answers: New rate: _____

Name _____

Scenario #2

The client has an order for Nipride to run 3 –6 micrograms per/kg/min to maintain the systolic BP less than 140mm Hg. The IV contains **Nipride 50mg in 250 ml D5W.** The client weighs 56 kg.

When you enter the room you note the client's SBP is 150 and the IV is running at 60ml/hr. The charge nurse recommends 4 microgram/kg/min. Set the IV pump at the appropriate rate.

Answer: New Rate _____

Name _____

Scenario #3

The client's monitor shows frequent PVCs. The doctor orders Lidocaine at 2 mg/min. The client weighs 150 lbs.

You have an IV solution of **Lidocaine 2 gm in 500 ml of D5W**. Set the IV pump to the appropriate rate.

Answer: New Rate_____

Q5 (MS)

Recognizing Arrhythmias

Hello, my name is _____. This is the **Recognizing Arrhythmias** station. Your patient is on telemetry. You are to analyze the following EKG strip and determine the requested information. You have 10 minutes to complete this station. What time does your watch say?

Start time _____ Please tell me when you have completed all the critical elements for this station.

End time _____

1. Identify if the rhythm is regular or irregular

2. Determine the rate

3. Identify the P waves, if present.

4. Determine the PR interval, if present

5. Identify the rhythm.

6. "Have you completed all the critical elements for this station?"
(? Asked)

7. Met the time limit.

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Scenario/ strip

Rhythm: regular or irregular

Rate:

Circle the P waves

PR interval:

What is the rhythm?

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Q5 (MS)

Suctioning an Intubated Patient

Hello, my name is _____. This is the **suctioning an intubated patient** station. This is your intubated patient. The MD orders are here and the equipment you might need is here. You have washed your hands, assessed the patient and explained to her what you are going to do. You have 10 minutes to complete this station. What time does your watch say?

Start time _____ Please tell me when you have completed all the critical elements for this station.

End time _____

1. **Identifies** client (**comparing** written name and number to name band).
2. Dons protective gear: goggles, mask, clean gloves.
3. Opens suction kit.
4. Verbalizes would fill flush container with sterile normal saline.
5. Connects suction tube to source of pressure.
6. Lubricates catheter with saline.
7. Give 5 breaths of 100% O2 with Ambu bag.
8. Advances catheter into tube without suction.
9. Applies suction and rotates catheter during removal.
10. Does not apply suction for more than 10 seconds.
11. Applies suction to rinse catheter and clear secretions.
12. Verbalizes would wait 2 – 3 minutes before suctioning again.
13. Replaces ventilator tubing.
14. Verbalizes would hyperventilate with 100% O2 after suctioning.
15. Verbalizes would auscultate lungs to assess effectiveness of suctioning.
16. Removes gloves and states would discard gloves and equipment in appropriate receptacle.
17. "Have you completed all the critical elements for this station?" (? Asked)
18. Met time limit.

Q5 (MS)

MEDICATION TITRATION

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Hello, my name is _____. This is the **Medication Titration** station. Your patient is receiving one of the following medications. Here are the MD orders. You are to determine the information requested in the scenario and change the IV pump if necessary. The scenario and answer sheet is here. You may use this paper as a scratch sheet. You may use a calculator. You have already washed your hands, looked up the medication in your drug book, and explained to the patient what you are going to do. You have 5 minutes to complete this station. What time does your watch say?

Start time _____ Please tell me when you have completed all the critical elements for this station.

End time _____

1. Uses vital signs or other relevant assessment to determine if calculation/titration is necessary.

2. **Identifies** client (**comparing** written name and number to name band).

3. Calculates the correct amount of medication or rate per hour the client will receive if change is necessary.

4. Calculates correct rate and sets IV pump rate, if change is necessary.

5. Writes legibly.

6. "Have you completed all the critical elements for this station?" (? Asked)

7. Met the time limit.

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Practice with **various** examples using different patient weights. Determine the rate if you know *the dose* and the dose if you know *the rate* for each of the following scenarios.

Scenario #1 – Dopamine drip

Usual solution is: Dopamine 500mg in 500ml of D5W
Recommended initial dose; 2-5 mcg/kg/min, not to exceed 50 mcg/kg/min
Example: client weighs 43 kg and IV at 39ml/hr

I. **Calculate concentration (mcg/ml)**: 500mg/500ml = 1mg/ml = 1000 mcg/ml

Calculate dose per kg per minute: example 30 ml/hr

$$\frac{\text{Concentration (mcg/ml)} \times \text{rate (ml/hr)}}{\text{Weight (kg)} \times 60\text{min/hr}} = \text{mcg/kg/min}$$

$$\frac{1000\ \text{mcg/ml} \times 30\ \text{ml/hr}}{43\ \text{kg} \times 60\text{min/hr}} = 11.627 = 11.63\ \text{mcg/kg/min}$$

II. If you know the dose and want to determine the rate:

$$\text{Rate} = \frac{\text{dose} \times \text{wt} \times 60\text{min/hr}}{\text{Concentration}}$$

Example: Adjust rate so runs at 15 mcg/kg/min

$$\frac{15\text{mcg/kg/min} \times 43\ \text{kg} \times 60\text{ min/hr}}{1000\ \text{mcg/ml}} = 38.7 = 38\ \text{ml/hr}$$

III. **To know range of safe IV rate:**

Calculate the upper and lower doses: example client weighs 43 kg
2mcg/min x 43 kg = 83 mcgs/min
50mcg x 43 kg = 2150 mcgs/min

Convert dose range to ml/min

1000 mcg : 1ml = 83 mcg : x ml
1000x = 168
x = 0.168 ml/min (lower dose)

1000 mcg : 1ml = 2150 mcg: x ml
1000x = 2150
x = 2.15 ml/min (upper dose)
range = 0.168-2.15 ml/min

Convert ml/min to ml/hr:

0.168ml x 60 min = 10.08 = 10 ml/hr (lower dose)
2.15 ml x 60 min = 129 = 129 ml/hr (upper dose)

Scenario #2 – Nipride drip

Usual solution is: Nipride 50 mg in 250 ml D5W
Recommended dosage: 3-10 mcg/kg/min
Example: Client weighs 110 lbs, IV running at 60 ml/hr
(110 lbs = 50 kg)

I. **Calculate concentration (mcg/ml)** 50 mg/250 ml = 0.2 mg/ml = 200 mcg/ml

Calculate dose per kg minute:

$$\frac{\text{Concentration (mcg/ml) x rate (ml/hr)}}{\text{Weight (kg) x 60min/hr}}$$

Example; $\frac{200 \text{ mcg/ml x } 60 \text{ ml/hr}}{50 \text{ kg x } 60 \text{ min/hr}} = 4$ mcg/kg/min

II**. If you know the dose and want the rate** –

$$\text{Rate} = \frac{\text{dose x wt x 60min/hr}}{\text{Concentration}}$$

Example: run at 6 mcg/kg/min

$$\frac{6 \text{ mcg/kg/min x50 kg x } 60}{200 \text{ mcg/ml}} = 90 \text{ ml/hr}$$

III. **To know safe IV rate**

Calculate the upper and lower dose

3 mcg x 50 kg = 150 mcg /min
10 mcg x 50 kg = 500 mcg/min

Convert dose range to ml/min

20 0mcg:1ml =150 mcg : x ml
200 mcg x = 150
x = 0.75 ml/min (lower dose)

200 mcg : 1 ml = 500 mcg: xml
200 x = 500
x = 2.5 ml/min (upper dose)
Range = 0.75-2.5 ml/min

Convert ml/min to ml/hr

0.75 ml x 60 min = 45 ml/hr
2.5 ml x 60 min = 150 ml/hr

Scenario #3- Lidocaine drip

Usual solution: Lidocaine 2 gm in 500 ml of D5W
Recommended dosage: 1-4 mg/min
Example Client weighs 55 kg, IV rate at 30 ml/hr

I. Calculate concentration; 2 gm/500ml = **2000 mg/500**ml
= 4mg/ml

II. **Dose = concentration x rate x 1 hr/60 min**

4 mg/ml x30 ml/hr x 1hr/60min = 2 mg/min

III. **If you know the dose and want the rate**

$$\text{Rate} = \frac{\text{Dose x 60 min/hr}}{\text{Concentration}}$$

Example: reduce dose to1 mg/min

$$\frac{\text{1 mg/min x 60 min/hr}}{\text{4 mg/ml}} = \text{15 ml/hr}$$

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