Practice Problems – Pediatric Medication Computation

Show your work for all questions.

1. A 4-year-old patient who weighs 32 lbs is admitted with pneumonia and a history of gastric reflux disease, and has the following orders:
   500ml D/NS with 0.6mEq of Potassium Chloride per kg per hour. Infuse IVF at 60ml/hour
   Famotidine 6mg IV q 12 hours
   Gentamycin 30mg IVB q 8 hours

   a. How much Potassium Chloride should be added to the IV bag?
      Bag runs for 8.3 hours
      0.6mEq x 14.5kg= 8.7mEq/hr
      8.7(mEq/hr) x 8.3(hours)= 72.21mEq added to bag
      72.21 mEq

   b. Famotidine comes in a vial with 10 mg/2ml. How much medication will you draw up to give the ordered dose?

      1.45ml

   c. Using your drug book, is this a safe dose of Famotidine for this child?

      yes- dosage= 1mg/kg/day in 2 divided doses
      32/2.2=14.5
      14.5x1= 14.5mg/day
      14.5/2= 7.25mg/dose

   d. Using your drug book, is this a safe dose of Gentamycin? If not, what would you do?

      Children 5 years and older: 2-2.5mg/kg/dose q 8hrs
      2 x 14.5= 29mg/dose
      2.5 x 14.5= 36.25mg/dose
      Not a safe dose!!

2. Liquid Tylenol 150mg is ordered every 4 hours prn for a 12kg child. The label on the bottle indicates that the concentration is 80mg/2 ½ ml.
   a. Using your drub book, determine if this is a safe dosage.

      10-15mg/kg/dose
      12 x 10= 120
      12 x 15= 150
      Yes, safe dose

b. How much would you give? Round to the nearest tenth.

150/80 x 2.5= 4.6875 ~ 4.7ml

3. A newborn weighing 2.8kg is ordered Lanoxin 0.035mg/kg/24 hours divided in 4 equal doses. Lanoxin comes 50mcg/ml. How much would you give for the 1000 dose?

2.8x 0.035=0.098mg/day
0.098/4doses= 0.0245mg
0.0245(mg)x1000(mcg)=24.5mcg
24.5mcg/50mcg x 1ml=0.49ml

4. A one-month-old weighs 9lbs 12oz.
a. Calculate his 24-hour fluid needs

12/16=0.75
9.75/2.2=4.43kg
4.43x100=443
443ml/24 hr

b. What would be the correct IV rate per hour for this infant?

18.45 ml/hr

5. A newborn weighs 8lbs. 5oz. and is being bottle-fed every 4 hours.
a. What is the infant's EWL?

13.3oz….7lb 8oz

b. What are the caloric needs for this infant per feeding? Express answer in both calories and number of ounces.

69.3 cal/feed & 3.46 oz/feed

6. Determine this newborn's estimated weight loss (how much can baby lose and what is the lowest they can get in lbs and oz?), nutritional needs, fluid maintenance needs, and expected urinary output: 10 lb 2oz

10lb 2oz converts to 4602gms or 4.602kgs

Estimated Weight Loss:
4602gms, can lose 460.2gms
4602 - 460.2 = 4141.8gms (lowest weight in grams)
4.142 kgm x 2.2 = 9.1124
0.112 x 16 = 1.79oz
9lb 1.8oz (lowest weight in lbs/oz)

Nutritional Needs:
4.602 x 110cal/day = 506.22cal/day

Fluid Maintenance Needs:
4.602 x 100ml = 460.2ml/day

Urinary Output:
4.602 x 0.5 = 2.3ml/hr to 4.602 x 2 = 9.2ml/hr