Medical Math: Dosage Calculations

A healthcare provider may have to consider various conditions in a patient, such as body weight, gender, medical history, in order to prescribe an appropriate dosage strength for that patient. Too little dosage and the patient’s symptoms are partially relieved. Too much dosage and the patient could overdose, leading to severe side effects or death.

Directions: Read each question on the left and answer it in the appropriate box on the right.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A physician orders Lotrel 5 mg PO (by mouth) daily for high blood pressure also known as hypertension. If each capsule contains 2.5 mg dose, then how many capsules must the patient take each day?</td>
<td>1.</td>
</tr>
<tr>
<td>2. Norvir is an antiretroviral drug that is used to fight HIV. Adults are typically prescribed 600 mg PO (by mouth) q 12 hours (every 12 hours). According to the drug label, how many mL will the patient be taking PO q 12 hours?</td>
<td>2.</td>
</tr>
<tr>
<td>3. If a baby is born at 6.6 lbs and 19 inches long, then what is the baby’s weight in kg? (2.2 lb = 1 kg)</td>
<td>3.</td>
</tr>
<tr>
<td>4. The pharmacist needs to fill an order for a 90-kg patient who was prescribed 15 mg of a drug per kg of body weight or 15mg/kg, for short. How many milligrams will the pharmacist need to fill for the prescription?</td>
<td>4.</td>
</tr>
</tbody>
</table>

RAHSI revised 27 July 2010
5. Glucophage 850 mg PO ac (by mouth before) breakfast and dinner daily has been prescribed for a patient which is designed to treat Type II Diabetes.

What is the patient’s daily dose in grams?

6. A medication (40 mg PO daily) has been ordered for your patient. Each tablet contains 0.02 grams.

How many tablets of this medication will you prepare?

7. Erythromycin is an antibiotic used to fight bacterial infection. You receive the following order:

Erythromycin 10 mg/kg PO q 8h

How many mL of erythromycin will you administer to a 40 kg child?

8. The physician ordered Azithromycin 15 mg/kg IV stat for a child who weighs 20 kg.

How many mg would the pharmacist need to put into the IV bag?

9. Morphine sulfate is used for pain relief but can also become addicting and fatal. The physician order reads morphine sulfate 0.3 mg IM (intramuscular) stat.

The recommended dose is 0.01 mg/kg. Is the ordered dose safe for a child who weighs 31 kg?

10. A pediatrician in special care nursery (NICU) ordered Vancocin (vancomycin) 10 mg/kg q 12 h, IV for a neonate with colitis who weighs 4,000 grams.

What is the dose in milligrams?