

**Homework 3**

**Bio pharmaceutics & Pharmacokinetics/PHAR434**

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**An antibiotic is to be given to an adult male patient (58 years, 75 kg) by IV infusion. The elimination half-life is 8 hours and the apparent volume of distribution is 1.5 L/kg. The drug is supplied in 60-mL ampules at a drug concentration of 15 mg/mL. The desired steady-state drug concentration is 20 *mc*g/mL.**

**a. What infusion rate in mg/h would you recommend for this patient?**

**b. What loading dose would you recommend for this patient? By what route of administration would you give the loading dose? When?**

**c. Why should a loading dose be recommended?**

**d. According to the manufacturer, the recommended starting infusion rate is 15 mL/h. Do you agree with this recommended infusion rate for your patient? Give a reason for your answer.**

**e. If you were to monitor the patient’s serum drug concentration, when would you request a blood sample? Give a reason for your answer.**

**f. The observed serum drug concentration is higher than anticipated. Give two possible reasons based on sound pharmacokinetic principles that would account for this observation.**



