Theophylline

1. H.Y. is a 25 years old, 50 kg woman receiving aminophylline with maintenance infusion rate of 20 mg/h (S=0.8). Her theophylline level is 12 mg/L. However, she needs to take ciprofloxacin at the same time (Factor=0.7). What is the maintenance infusion rate to keep the same theophylline level?

Cyclosporine

2. A 40 years old 70 kg weight patient received a kidney transplant and treated with cyclosporine tablet 200 mg TID (F=0.3). After achieving steady state, his “true” trough level is 60 ng/mL. If the desired peak and trough concentrations at steady state are 300 ng/mL and 100 ng/mL, what would be the new dosing regimen? (Vd=4.5L/kg) (Cyclosporine is rapidly absorbed)

Lidocaine

3. P.C. is a 60 kg, 50 years old man with heart failure. Predict the loading IV dose of lidocaine to achieve the plasma level of 5 mg/L. (Vc=0.3 L/kg, Vd=0.88L/kg, S=0.87) Calculate the maintenance infusion rate of lidocaine to keep the concentration to 3 mg/L. (CL=6 mL/kg/min)

Procainamide

4. I.B. is a 50 years old, 75 kg male with serum creatinine of 1.2 mg/dL. He is treated with procainamide because of tachyarrhythmia. Calculate the half-life of procainamide in this patient. (Vd=2L/kg)