

## CREATININE CLEARANCE SAMPLE PROBLEM

**NOTE: The CrCl formula will be provided to students during the exam. The emphasis will be on application and making the right assessment.**

Joe Smith (JS) is a 72-year old male with a past medical history of COPD. Today he presents to the ED complaining of shortness of breath and wheezing. A respiratory culture from last week reported the presence of Streptococcus pneumoniae, consistent with community-acquired pneumonia. Levofloxacin (Levaquin) was ordered, requiring dosage adjustment in a patient with renal insufficiency. Recommend a dosage regimen for levofloxacin (Levaquin), based on Joe's renal function.

A blood chemistry panel reported the following values:

Joe's HT / WT = 5' 9" / 175 LBS.

Na = 148

K = 4.8

Cl = 102

Glucose = 112

CO<sub>2</sub> = 24

BUN = 52

Cr = 1.9

### QUESTIONS

1. Calculate Joe's IBW (ideal body wt)
2. Calculate his CrCl (creatinine clearance).
3. Recommend the appropriate dose of levofloxacin for Joe.

### Levofloxacin (Levaquin) Monogram

For patients with a CrCl greater than 50 ml/min, the dosage recommendation is levofloxacin is 750 mg IV/PO daily. For patients with CrCl 20-49 ml/min, levofloxacin 750 mg IV/PO every other day (i.e., every 48 hours) is recommended. Patients with a CrCl 10-19 ml/min require a dosage adjustment of levofloxacin 500 mg every other day.

### **ANSWERS:**

**1. Joe's IBW = 70.7 kg**

**2. Joe's CrCl =  $(140-72)(70.7) / (1.9)(72) = 35.14$  ml/min**

Note: Since Joe is a male patient, we will NOT take into account a 15% reduction in his calculated CrCl value. Female patients would require us to multiply the CrCl result by 0.85 .

**3. Since Joe's CrCl value of 35.14 ml/min falls within the 20 to 49 ml/min range in the drug monogram, the recommended dose of levofloxacin is 750 mg IV/ PO every other day (i.e. every 48 hours).**