



PIC QUESTION OF THE WEEK: 02/07/05

Q: A 70-year-old female presented to the E.R. with cellulitis of the right foot and was subsequently placed on cefoxitin. Maintenance medications included: atenolol, levothyroxine, pantoprazole, gemfibrozil, valsartan, and pravastatin. Routine laboratory tests drawn three days after initiation of cefoxitin revealed a serum creatinine (SCr) concentration of 13.7 mg/dL (0.8 mg/dL prior to admission). The patient's other laboratory values were within normal limits. She is not diabetic nor does she have renal disease. Is it possible that cefoxitin or any of the other medications are responsible for the dramatic rise in her serum creatinine?

A: Interestingly, the only elevated laboratory value was the (SCr). Generally, when renal dysfunction is suspected, other lab values (BUN for example) are also increased. In this situation, it is reasonable to consider that some factor has resulted in a falsely elevated creatinine concentration. Unusually large amounts of uric acid, glucose, fructose, acetone, acetoacetate, pyruvic acid, and ascorbic acid can lead to false increases in SCr. Hyperlipidemia, diabetes, and hyperbilirubinemia can also falsely elevate SCr. In addition, drugs such as cefoxitin, cephalothin, dopamine, levodopa, methyl dopa, lidocaine, and intravenous fat emulsions can produce artificially high SCr levels. Cefoxitin can significantly interfere with the Jaffe and KDA methods for measurement of SCr. This patient's SCr was assayed using the Jaffe method and the blood sample taken 30 minutes after administration of the drug. Elevations of 1.5 -8.5 times the normal SCr have been reported in patients receiving cefoxitin. To minimize the occurrence of falsely elevated SCr, it is recommended that blood samples be drawn just prior to administration of cefoxitin or 2 -4 hours after the dose has been infused. *A SCr level was drawn the following day just prior to the dose of cefoxitin. It resulted in a value of 1.2mg/dL.*

References:

- Comstock TJ, Whitley KV. In; Lee M, ed. Interpreting laboratory data, 3rd ed. Bethesda: ASHP; 2004:233-62.
- Colaluca DM:Cefoxitin. In:Hutchison TA and Shahan DR:DRUGDEX System.Micromedex, Greenwood Villiage, Colorado (Edition expires 3/2005).

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