

## **DISCONNECT BETWEEN BETA-2 MICROGLOBULIN AND CREATININE AFTER RENAL TRANSPLANT**

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Beta-2 Microglobulin ( $\beta$ 2M) levels fall quickly reaching normal values within a day or two after a successful renal transplant. We report an interesting case of a patient with persistently normal  $\beta$ 2M with a rising Scr and BUN post renal transplant. Pt also developed fluid overload and required HD. The normal  $\beta$ 2M levels were perplexing.

**Case Report:** Pt is a 44 year old male with ESRD, who received a living related renal transplant in April, 2007. On post op day 1 the patient's Scr was down to 2.2 mg/dl and his  $\beta$ 2M was in normal range at 2.1 mg/L with good urine output and a normal nuclear flow scan. Pt continued to improve and was discharged with a Scr of 1.2mg/dl; BUN of 27 mg/dl; and a  $\beta$ 2M level of 1.5 mg/L.

Pt returned 2 days later with abdominal discomfort with a Scr of 1.5 mg/dl; BUN of 39 mg/dl and a  $\beta$ 2M level of 1.5 mg/L. Ultrasound of the transplanted kidney and CT scan (w/o dye) were normal except a question of small left flank hematoma. During the hospital admission, his urine output decreased to less than 10cc/hr, and his Scr and BUN reached 90mg/dl and 5.8 mg/dl; the patient developed fluid overload and required HD. A kidney biopsy revealed no evidence of rejection. A repeat US showed a normal looking transplanted kidney in the face of worsening Scr and BUN. His  $\beta$ 2M level stayed normal. Even HD did not seem to improve his BUN and Scr as would be expected.

Nuclear flow scan was repeated and revealed a frank urine leak. Pt was taken to the OR and had evacuation of a urinoma and the ureter was re-implanted. He recovered well with normalization of BUN and Scr. It is of note that his  $\beta$ 2M levels stayed normal within a range of 1.5mg/L to 2.1mg/L throughout the duration of the urine leak, while Scr and BUN kept worsening.  $\beta$ 2M level dropped to 1.2 mg/L after the urine leak was corrected suggesting some  $\beta$ 2M reverse peritoneal absorption while the urinoma was present in the peritoneum.

**Conclusion:** In a pt with rising Scr and a normal  $\beta$ 2-M level post transplant, a urinary leak should be suspected. Reverse absorption of molecules from peritoneum to blood is also dependant on their molecular size.