



# Decreased retinol-binding protein 4 in the sera of patients with end-stage renal disease after kidney transplantation

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Genet. Mol. Res. 13 (4): 8126-8134 (2014)

Received July 29, 2013

Accepted April 2, 2014

Published October 7, 2014

DOI <http://dx.doi.org/10.4238/2014.October.7.7>

**ABSTRACT.** Retinol-binding protein 4 (RBP4) is a novel adipokine that has been associated with insulin resistance and type 2 diabetes. Patients with end-stage renal disease (ESRD) have very high serum RBP4 levels. However, whether successful kidney transplantation alleviates these elevated serum RBP4 levels is unclear. The serum RBP4 levels of 24 ESRD patients were determined before transplantation and at 1 day, 1 week, and 1 month after kidney transplantation. The control group included 22 healthy subjects. Serum RBP4 concentrations were measured using a commercial kit via the immunologic turbidimetric method, and were related to biomarkers for renal and liver function. The serum RBP4 level of ESRD patients before kidney transplantation ( $160.8 \pm 29.1$  mg/L) was

approximately 7-fold higher than that of normal controls ( $22.6 \pm 11.0$  mg/L;  $P = 0.000$ ). The serum RBP4 level before transplantation was significantly higher than that at 1 day ( $65.3 \pm 28.4$  mg/L), 1 week ( $48.3 \pm 22.9$  mg/L), and 1 month after transplantation ( $53.1 \pm 25.5$  mg/L;  $P = 0.000$ ). However, these values were still higher than those of controls ( $P = 0.000$ ). Univariate regression analysis showed that the percent changes in serum RBP4 concentration before and after kidney transplantation were positively correlated with serum creatinine, blood urea nitrogen, phosphate, and pre-albumin concentrations and negatively correlated with the estimated glomerular filtration rate. The serum RBP4 concentration of patients with ESRD decreased significantly after kidney transplantation; therefore, we found that serum RBP4 concentration was related to renal function.

**Key words:** End-stage renal disease; Kidney transplantation; Renal function; Retinol-binding protein 4