

25 (OH)D3 Level and Obesity Type, and Its Effect on Renal Excretory Function in Patients with a Functioning Transplant

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Abstract : Introduction: Vitamin D3 has a proven pleiotropic effect, not only responsible for calcium and phosphate management, but also influencing normal functioning of the whole body. Aim: Evaluation of vitamin D3 resources and its effect on a nutritional status, obesity type and glomerular filtration in kidney transplant recipients. Methods: Group of 152 (81 women and 71 men, average age 47.8 ± 11.6 years) patients with a functioning renal transplant their body composition was assessed using the bioimpedance method (BIA) and anthropometric measurements more than 3 months after the transplant. The nutritional status and the obesity type were determined with the Waist to Height Ratio (WHtR) and the Waist to Hip Ratio (WHR). 25-Hydroxyvitamin D3 (25 (OH)D3) was determined, together with its correlation with the obesity type and the glomerular filtration rate (eGFR) calculated with the MDRD formula. Results: The mean 25 (OH)D3 level was 20.4 ng/ml. 30ng/ml was considered as a minimum correct level 22,7% of patients from the study group were classified to be a correct body weight, 56,7% of participants had an android type and 20,6% had a gynoid type. Significant correlation was observed between 25 (OH)D3 deficiency and abdominal obesity ($p < 0.005$) in patients. Furthermore, a statistically significant relationship was demonstrated between the 25 (OH)D3 levels and eGFR in patients after a kidney transplant. Patients with an android body type had lower eGFR versus those with the gynoid body type ($p=0.004$). Conclusions: Correct diet in patients after a kidney transplant determines minimum recommended serum levels of vitamin D3. Excessive fatty tissue, low levels of 25 (OH)D3, may be a predictor for android obesity and renal injury; therefore, correct diet and pharmacological management together with physical activities adapted to the physical fitness level of a patient are necessary.

Keywords : kidney transplantation, glomerular filtration rate, obesity, vitamin D3

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