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Evaluation of Clinical and Laboratory Parameters Affecting Measurements of Bone Mineral Densitometry in Renal Transplantation Patients

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Abstract

Introduction: Histological evidences of osteodystrophy and osteopenia in the majority of successful kidney transplant patients are frequently detected. In this study we aimed to evaluate the bone mass values in patients with kidney transplantation and to investigate the factors affecting these values.

Materials and Methods: In the study, 83 male (mean age 40.42±11.64), and 35 woman (mean age 39.8±12.4) a total of 118 kidney transplant patients over 18 years of age were included. The patiens's laboratory and clinical informations was reviewed retrospectively via electronic hospital registry system.

Results: Patients had values of BMD that 28 normal (%23.7), 57 osteopenic (%48.3), 33 osteoporotic (%28). Significant positive correlations were found between weight and body mass index (BMİ) values and BMD measurements (gr/cm^2 and T score). BMD measurement values (gr/cm^2) were significantly lower in the group that receiving both hemodialysis and peritoneal hemodialysis treatments (p=0.040). T score values were significantly lower in the HD group (p=0.017), also osteopenic and osteoporotic values were significantly higher in HD group (p=0.046). Normal T score values were significantly higher in the transplantation center which is Antalya group (p=0.030). There was a significant negative correlation between T score and PTH (p=0.012; r=-0.237) and 25(OH)vitD (p=0.041; r=-0.272) values. In our study osteopenic values were found to be significantly higher in patients group that does not receive mTOR inh (p=0.002).

Conclusions: We have found that the value of BMI, previous renal replacement therapy modality, transplantation center, mamalian target of rapamycin (mTOR) inh's treatment, serum PTH levels has an effect on BMD measured values In renal transplant patients. We believe that; in the pre-transplantation period making follow-ups of the patients in terms of bone metabolism, to give appropriate osteoporosis treatment, doing the strict follow-ups of patients at the their transplantation centers and, in terms of post-op complications being in coordination with related branches, has an important place in the preservation and treatment of bone dansities in patients with renal transplantation as well.

Keywords: Renal transplantation, bone mineral densitometry, osteoporosis

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