Introduction: Sexual dysfunction and vitamin D deficiency are highly prevalent in dialysis patients. Low levels of vitamin D have been linked to many diseases. To the best of our knowledge, the relationship between vitamin D and sexual dysfunction in dialysis patients has not been previously reported in the literature. Materials and methods: Cholecalciferol, 50,000 IU/week, was orally administered to 37 dialysis patients with vitamin D insufficiency for 3 months followed by dosage of 10,000 IU every other week for 3 months. The Arizona Sexual Experiences Scale (ASEX), Hospital Anxiety and Depression Scale and Pittsburgh Sleep Quality Index questionnaires were filled out by all patients at baseline and at the sixth month of the study. Results: Sexual dysfunction, poor sleep quality, anxiety and depression rates were 83.7%, 45.9%, 18.9% and 48.6%, respectively in all patients. ASEX total score was found to be positively correlated with age and was negatively correlated with serum 25(OH)D level and serum albumin level. After cholecalciferol treatment, 25(OH)D levels increased significantly, however no significant change was observed in any of the parameters. In multivariate linear regression analysis, age and 25(OH)D level were found to be independent predictors of ASEX total score. Conclusions: Vitamin D deficiency seems to contribute to sexual dysfunction in dialysis patients. However, it was observed in this study that; cholecalciferol replacement given to dialysis patients with vitamin D insufficiency did not result in any significant changes in sexual functions.

**Keywords:** Dialysis, sexual dysfunction, vitamin D