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ORIGINAL RESEARCH COMMUNICATION

Vitamin D status in kidney transplant patients: need for intensified routine supplementation[1,2,3]

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Background: A high prevalence of vitamin D insufficiency has been found in the general population and in patients with chronic kidney disease.

Objective: The aim was to examine vitamin D status and determinants and metabolic correlates of serum 25-hydroxyvitamin D in a population of adult Danish kidney transplant patients.

Design: This was a cross-sectional study of 173 adult kidney transplant patients with a mean (±SD) age of 53.4 ± 11.7 y and a median graft age of 7.4 y (interquartile range: 3.3–12.7 y). Serum concentrations of intact parathyroid hormone (S-PTH), 25-hydroxyvitamin D [S-25(OH)D], and 1,25-dihydroxyvitamin D [S-1,25$(OH)_2$D] were measured. Dietary and supplementary intake of vitamin D, avoidance of solar ultraviolet B exposure, and selected lifestyle factors were assessed in a subgroup (n = 97).

Results: Fifty-one percent of the patients had vitamin D insufficiency [S-25(OH)D 40–75 nmol/L], and an additional 29% had moderate-to-severe vitamin D deficiency [S-25(OH)D ≤ 39 nmol/L]. In multiple regression analysis, sun avoidance (negative association) and vitamin D supplementation (positive association) were independent determinants of S-25(OH)D concentrations. Low S-25(OH)D concentrations were associated with *1*) increased S-PTH concentrations (P = 0.0002), independently of S-1,25$(OH)_2$D concentrations, and *2*) decreased S-1,25$(OH)_2$D concentrations (P = 0.002), independently of graft function.

Conclusions: Hypovitaminosis D is common among Danish kidney transplant patients and is associated with reduced concentrations of S-1,25$(OH)_2$D and increased S-PTH concentrations. Sun avoidance and vitamin D supplementation are important determinants of vitamin D status. The observed hypovitaminosis D might be corrected by intensified routine vitamin D supplementation as opposed to the current supplementation practice.

Key Words: Kidney transplantation • hypovitaminosis D • prevalence • sun exposure • vitamin D intake • 25-hydroxyvitamin D • 1,25-dihydroxyvitamin D • parathyroid hormone