Vitamin D status in renal transplant recipients: need for fortified routine supplementation

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Background

Vitamin D insufficiency has been found very common in the general population as well as in patients with chronic kidney disease. However, little is known about the vitamin D level in Chinese renal transplant recipients and vitamin D supplementation is not a routine treatment after transplant. This study was aimed to examine vitamin D status and its correlations with other metabolic biochemical markers in a population of adult Chinese renal transplant recipients.

Methods

This cross-sectional study included 72 renal transplant recipients who received a triple immunosuppressive therapy (steroids, tacrolimus and mycophenolate mofetil), with a mean age of 36.36±8.18 years and a median graft age of 14.5 months. Serum concentrations of 25-hydroxyvitamin D [25(OH)D], parathyroid hormone (PTH), total calcium (Ca), inorganic phosphate (PO4), and renal function parameters (including serum urea nitrogen, uric acid, serum creatinine and Cystatin C) were measured.

Results

Of all the 72 patients, 35% had vitamin D insufficiency [25(OH)D 15–30 ng/mL], and an additional 61% had vitamin D deficiency [25(OH)D < 15 ng/mL]. In correlation analysis, 25(OH)D concentrations were negatively correlated with PO4 and PTH (r= -0.37, -0.28, respectively, P < 0.05), independently of renal function level.

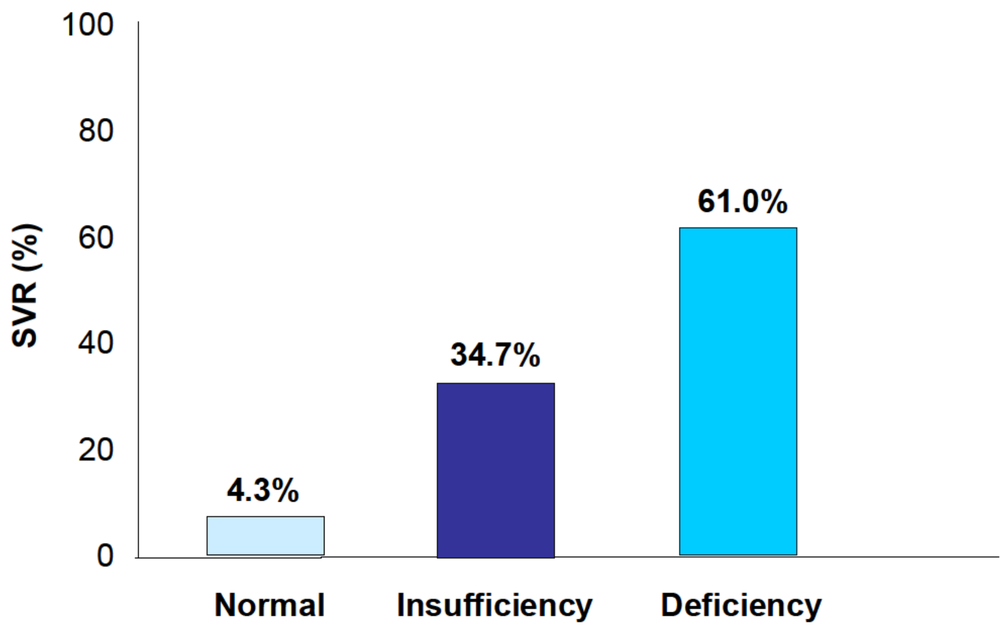

Fig 1 25(OH)D status in 72 renal recipients

Note: International federation of kidney foundations:
Normal Vitamin D : 25-OHD > 30ng/mL
Vitamin D insufficiency: 15ng/mL≤25-OHD≤30ng/mL
Vitamin D deficiency: 25-OHD≤30ng/mL

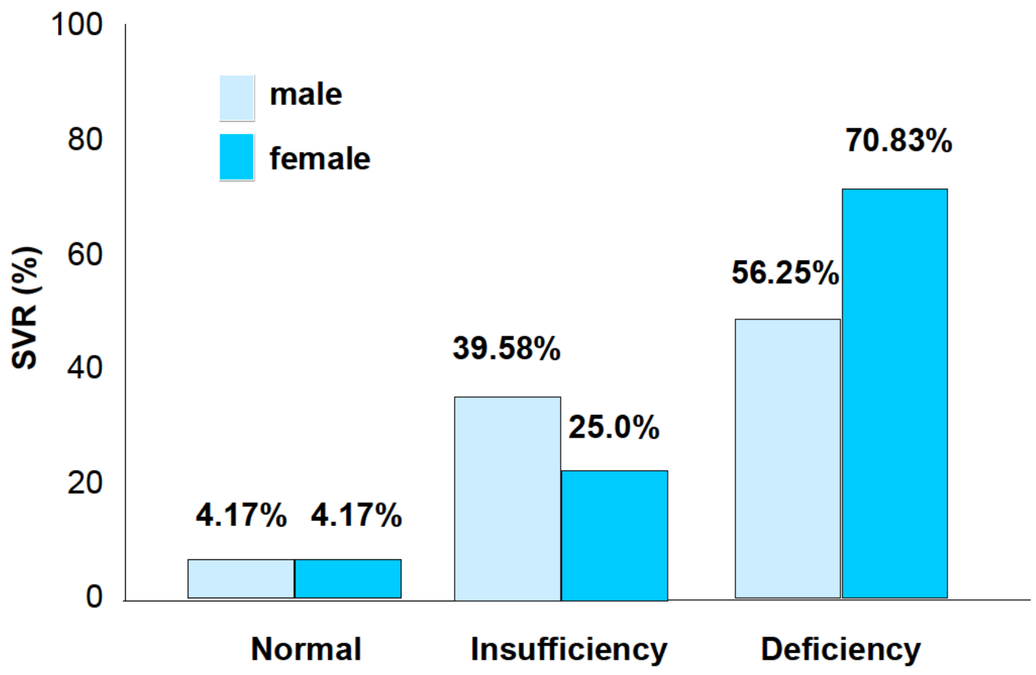

Fig 2 25(OH)D status in male and female recipients

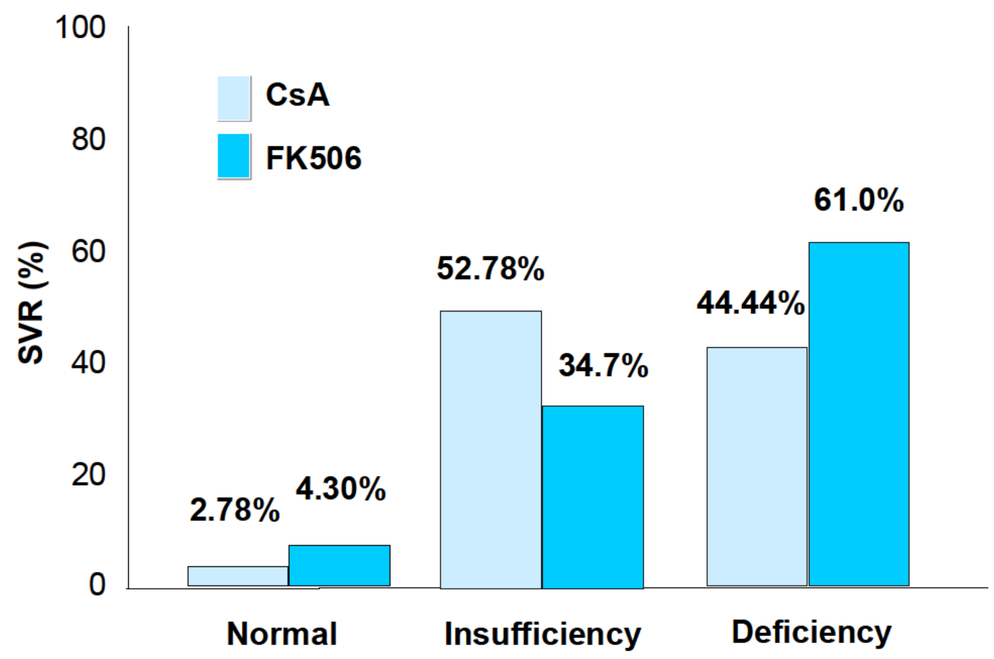

Fig 3 25(OH)D status in recipients administered with CsA or FK506

Table 1. Correlation analysis between 25-OHD and metabolic biochemical markers

	r	*P*
Ca (mmol/L)	2.53	0.05
PO4 (mmol/L)	-0.37	**0.002***
PTH (pmoL/L)	-0.28	**0.008***
BUN (mmoL/L)	-0.12	0.31
CREA (umoL/L)	-0.22	0.06
CysC (mg/L)	-0.15	0.23
URIC (umoL/L)	0.10	0.38

Conclusions

Deficiency of vitamin D was very common among Chinese renal transplant recipients, which was associated with increased PO4 and PTH level. Because of sun avoidance in transplant population, intensive vitamin D supplementation should be considered as a routine treatment for those recipients.

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