

25-HYDROXY VITAMIN D LEVELS ARE RELATED TO PARAMETERS OF RESIDUAL RENAL FUNCTION IN ADULT PERITONEAL DIALYSIS PATIENTS.

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Introduction and Aims:

There is uncertainty of the effects vitamin D supplementation in dialysis patients. 25-hydroxy vitamin D (25(OH)D) levels may show some seasonal variance in dialysis patients due to differences in alimentation and sun exposure. The aim of the study was to analyse the relation between 25(OH)D levels and residual renal function in adult peritoneal dialysis (PD) patients.

Methods:

Renal function parameters, as weekly creatinine clearance (Crea-Cl), urea clearance (Urea-Cl), fractional excretion of urea (FE-Urea) and renal KT/V, were analysed in 32 PD patients together with serum 25(OH)D. All patients had residual diuresis of at least 100 ml per day. Levels of serum 25(OH)D below 20 ng/ml were classified as deficiency and levels between 20 and 30 ng/ml as insufficiency. All patients were under high dose furosemide therapy of at least 250 mg per day, and did not receive oral vitamin D supplementation. Vitamin D receptor agonists (calcitriol or paricalcitol) were given to control calcium-phosphorous-parathormone.

Results:

Adult PD patients (mean age 63 16 years) presented mean diuresis of 1108 683 ml per day, Crea-Cl of 49 34 L/week, Urea-Cl of 25 15 L/week, FE-Urea of 0.54 0.16 and renal Kt/V 0.68 0.46. Mean values of 25(OH)D were at 13.9 7.7 ng/l. Two patients presented 25(OH)D levels above 30 ng/ml, five patients 25(OH)D insufficiency and the remaining 25 patients deficiency. Serum 25(OH)D levels correlated to renal creatinine excretion ($r=0.35$, $p=0.049$), renal urea excretion ($r=0.42$, $p=0.02$), FE-Urea ($r=0.40$, $p=0.02$) and Urea-Cl ($r=0.41$, $p=0.02$), but not to diuresis, Cl-Crea or KT/V (figures 1 – 3). Patients with higher 25(OH)D levels show relatively higher rates of urinary urea elimination even in relation to creatinine excretion.

Conclusions:

Serum 25(OH)D was in the majority of cases in the range of deficiency. Several parameters of residual renal function were associated to 25(OH)D, especially parameters regarding urea elimination (daily urinary excretion of urea, FE-Urea and Urea-CL). Whether a supplementation of vitamin D will have an effect on residual renal function parameters has to be proven.

Figure 1: Correlation between renal excretion of urea and creatinine and 25-OH vitamin D levels

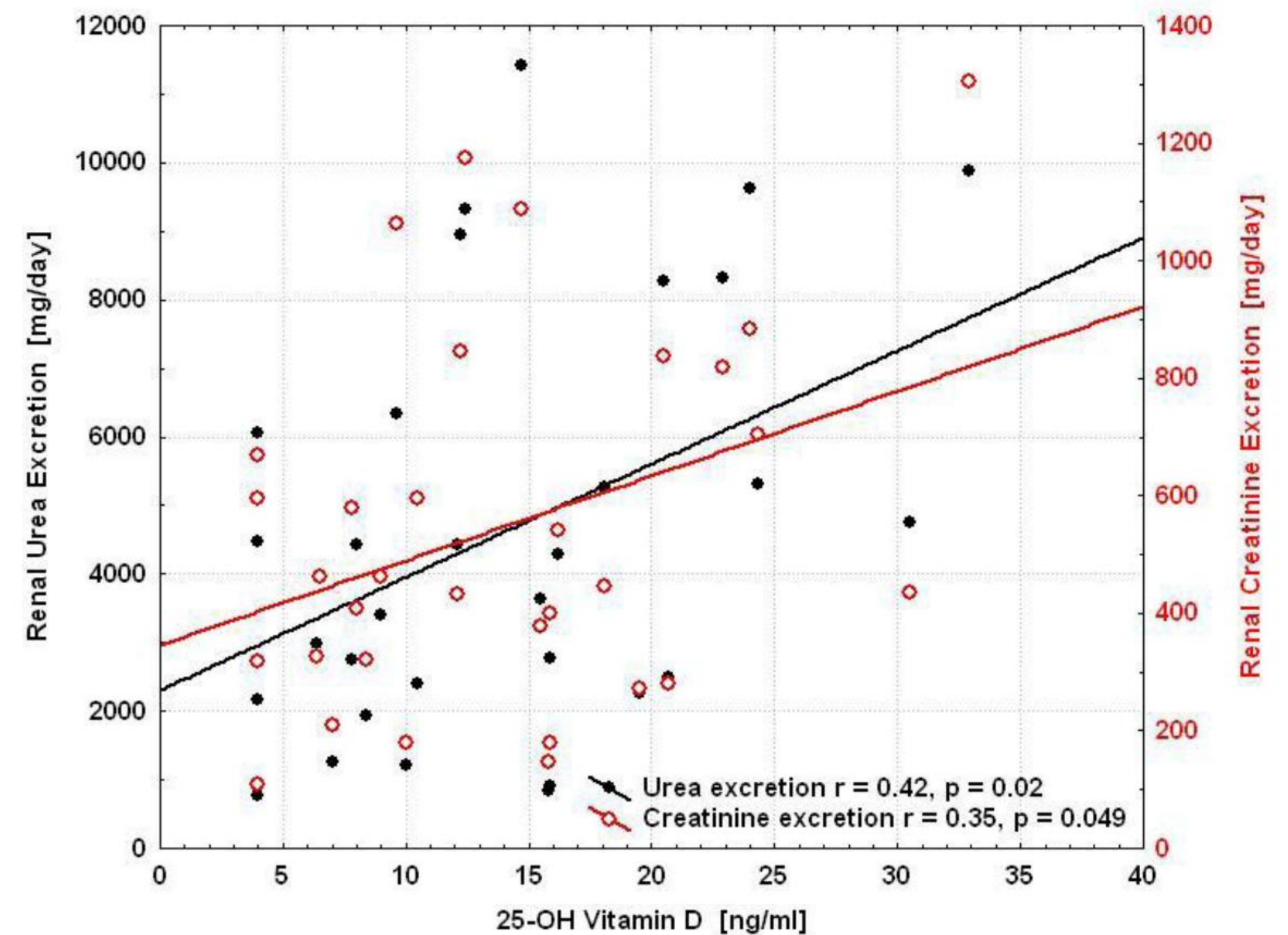


Figure 2: Correlation between renal clearance of urea and creatinine and 25-OH vitamin D levels

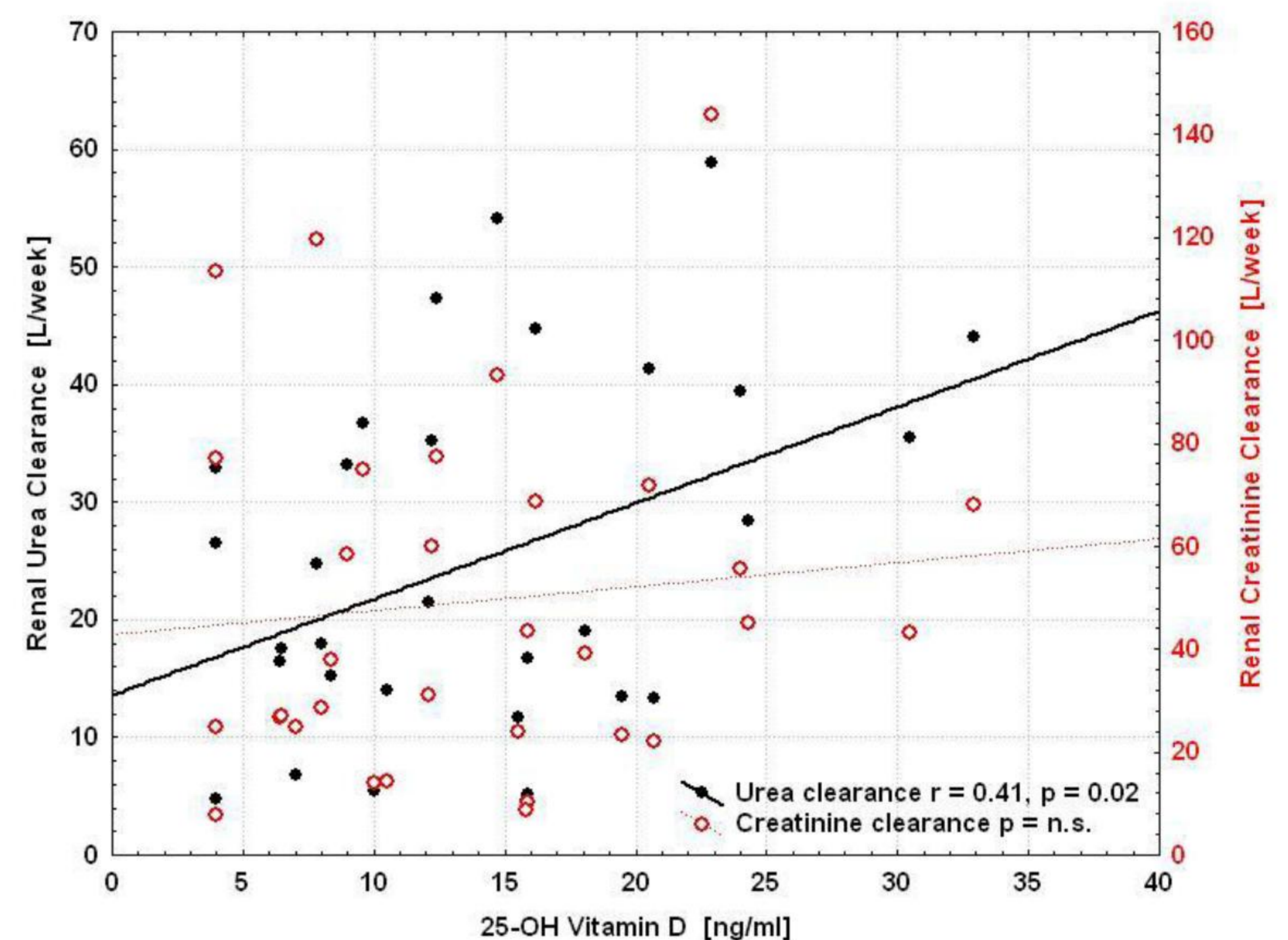


Figure 3: Correlation between fractional excretion of urea and 25-OH vitamin D levels

