

Bone and vitamin D status in young male patients with relapsing kidney lithiasis and hypercalciuria

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BACKGROUND

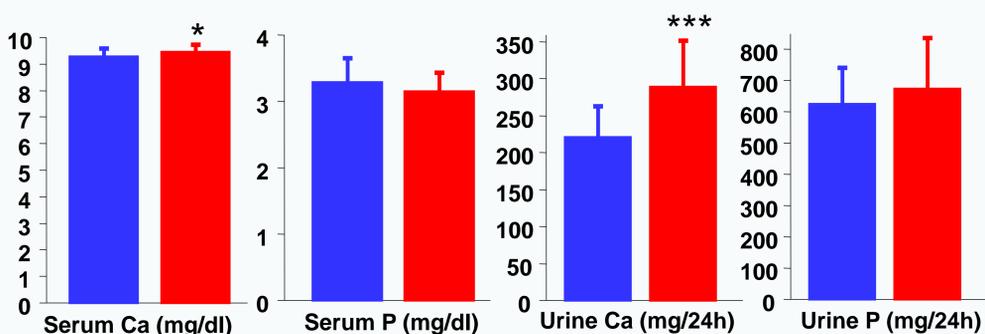
- ➔ Idiopathic hypercalciuria is a risk factor for relapsing kidney lithiasis
- ➔ Both hypercalciuria and relapsing lithiasis are often associated with low bone mineral density

AIMS

- ➔ To evaluate the particularities of calcium and bone metabolism at younger male patients with idiopathic hypercalciuria and relapsing kidney lithiasis

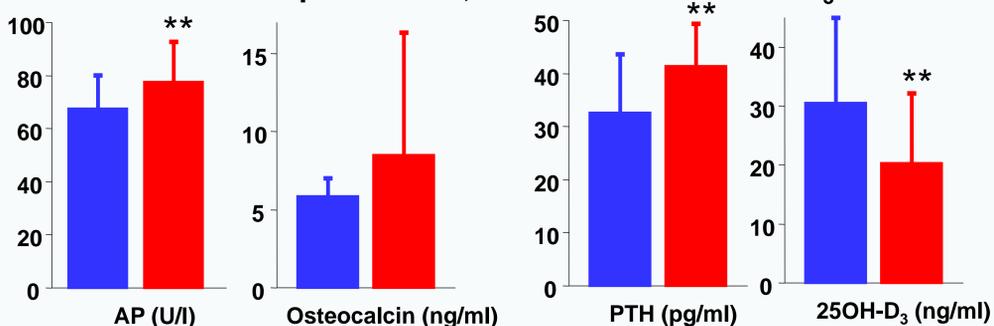
RESULTS

- ➔ Serum and urine Ca and P



Serum and urine calcium were higher in the RN group

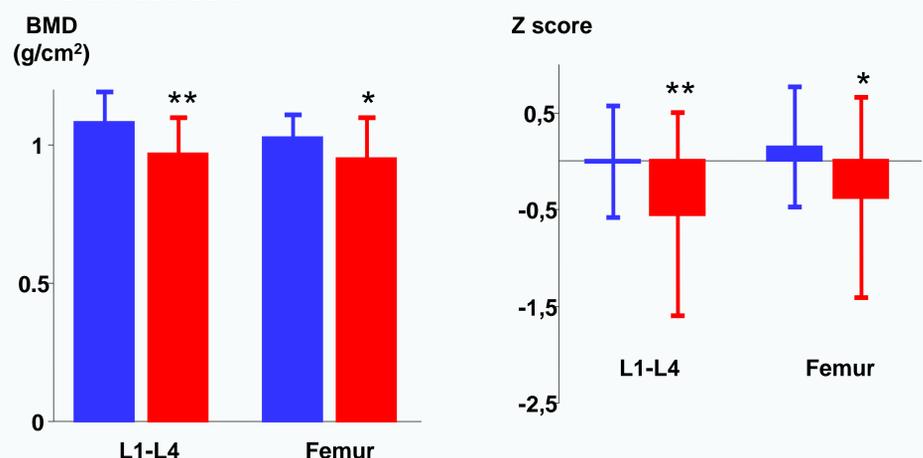
- ➔ Bone turnover parameters, serum PTH and 25OH-D₃



Bone turnover, as well as mean PTH were higher, and 25OH-D₃ was lower in the RN group

RESULTS

- ➔ Bone mineral density and Z score at the lumbar region and femoral neck



Mean BMD and Z score were lower at patients with RN both at the lumbar region and femoral neck

METHODS

- Cross sectional study involving 30 young patients with relapsing nephrolithiasis (RN) and 30 age and BMI-matched healthy controls (CTR)

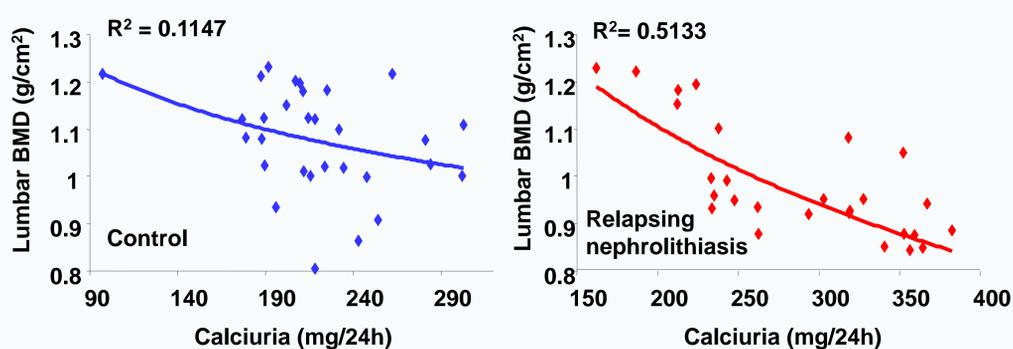
Group name	Control	Relapsing lithiasis
Number	30	30
Age (years)	35.6 ± 6.9	37.2 ± 7.6
Weight (kg)	78.8 ± 7.5	77.5 ± 8.8
Height (m)	1.75 ± 0.05	1.76 ± 0.06
BMI (kg/m ²)	25.6 ± 2.4	25.1 ± 2.6

- Exclusion criteria: congenital bone/kidney disease, renal tubular acidosis, intestinal inflammatory disease, bisphosphonate treatment, hypogonadism, Cushing's disease / prolonged corticoid therapy, obesity, primary hyperparathyroidism, treatment with thiazides, potassium citrate, calcium and vitamin D

- Evaluation of serum and urinary calcium and phosphate, PTH, 25OH-D₃, alkaline phosphatase, osteocalcin, bone mineral density at the lumbar and hip regions (DXA, Hologic)

RESULTS

- ➔ Correlation between calciuria and lumbar BMD



Urine calcium excretion was inversely correlated with lumbar BMD. Correlation was more important in the RN group

CONCLUSIONS

- ➔ Young male patients with RN have lower bone mass with higher turnover and hypercalciuria
- ➔ D hypovitaminosis may favor RN, by causing a rise in PTH through lack of negative feedback
- ➔ Vitamin D repletion in patients with RN and hypovitaminosis may be beneficial through reversal of PTH levels and decrease of bone resorption and hypercalciuria
- ➔ Antiresorptive therapy may prevent bone loss and also decrease calciuria and RN risk in selected patients

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