



PP53

Hypocitraturia is much more important than hypercalciuria

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Introduction and Objectives: For ages hypercalciuria has been known the dominant risk factor for stone recurrence in calcium containing stones. Aim of the present study was to evaluate the frequency of hypercalciuria and hypocitraturia in high-risk stone patients with special regard on recurrence rate and specific metaphylaxis.

Material and Methods: From 2008 to 2013 104 high-risk stone patients were treated in our clinic. 72 of them underwent metabolic assessment. 70 patients fulfilled the criteria for our retrospective assessment (aged over 16yrs, calcium containing stones). Metabolic assessment included blood chemistry, blood gas analysis and a 24-hours urine collection. Urine analysis included calcium, citrate, oxalate, phosphate, magnesium and uric acid. In most patients specific metaphylaxis was recommended. Recurrence rate was observed during a follow-up period of at least 8 months.

Results: 22 of the patients had pure calciumoxalate stones, 6 had pure calciumphosphate stones and 42 presented with mixed calciumoxalate / calciumphosphate stones. In pure calciumoxalate stones 7 presented with hypercalciuria ($> 7\text{mmol}/24\text{hrs}$) and 13 with hypocitraturia ($< 2,5\text{mmol}/24\text{hrs}$). In pure calciumphosphate stones 71 presented with hypercalciuria and 4 with hypocitraturia. In mixed calcium containing stones 18 presented with hypercalciuria and 26 with hypocitraturia. In all calcium containing stones hypocitraturia was observed in 43 patients, hypercalciuria in 26 patients respectively. Hypocitraturia and was statistically significant ($p=0,0161$) more common than hypercalciuria.

Conclusions: 97% of our patients had calcium containing stones. Hypocitraturia was significantly more common in these patients than hypercalciuria. Treatment of hypocitraturia seems to be the important factor in prevention of stone recurrence.