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Analysis of vitamin D deficiency in calcium stone-forming patients.

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Abstract

PURPOSE: The aim of this study is to analyse the percentage of hypovitaminosis D, as well as its relationship with the various parameters of calcium-phosphate metabolism.

METHODS: A case control study was conducted on 366 patients, divided into two groups: Group 1: 127 non-stone-forming patients, and Group 2: 239 calcium stone forming. A study was performed on calcium-phosphate metabolism and urinary lithogenic factors. The percentage of vitamin D deficiency (25-OH-vitamin D levels <20 ng/ml) between the groups was analysed and compared. The SPSS 20.0 statistics program was used for the analysis, with a $p \leq .05$ being considered significant.

RESULTS: The mean age of Group 1 was 52.1 years compared to 49.6 years in Group 2, with no significant differences ($p = .07$). Vitamin D levels were lower in Group 2 compared to Group 1 (25.7 vs. 28.4 ng/ml, $p = .02$). A vitamin D deficiency was observed in 28 % of the Group 2 stone-forming patients versus 15.7 % in Group 1 ($p = .009$), with an odds ratio (OR) of 2.09 (95 % CI; 1.19-3.63). In the stone-forming patients with a vitamin D deficiency, the only difference observed was the higher levels of iPTH compared to those stone-formers with a normal vitamin D (56.9 vs. 45.5 pg/ml, respectively; $p = .0001$).

CONCLUSION: Calcium stone-forming patients have lower mean levels of vitamin D and a higher percentage of hypovitaminosis D than in non-stone-forming patients. This was only related to increased iPTH levels, with urine calcium and other lithogenic parameters having no obvious effect.

KEYWORDS: Calcium; Calcium stones; Metabolism; Phosphorus; Vitamin D deficiency

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