Recently much attention is attracted the issue of increasing the risk of fractures in patients with nephrolithiasis (NL) 1,2 and is considered a possible association pathophysiology of osteoporosis /osteopenia and NL.6,6

The aim:
Assess the state of bone metabolism, levels of vitamin D in patients with NL Compared with healthy individuals appropriate age and sex.

Materials and Methods

- 58 patients with NL (36 women and 22 men)
- 20 healthy individuals

Exclusion criteria: primary hyperparathyroidism and other endocrine pathology, chronic renal failure, a history of receiving bisphosphonates and / or calcium and vitamin D.

All patients were studied markers of bone metabolism: b-cross laps (CTX), osteocalcin (OC); 25 OH vitamin D (studied in the period from autumn to early spring); PTH, calcium levels in the blood and urine daily.

Groups did not differ on
- age (mean age of patients with NL 50 ± 11,4 years (range 17 to 50 years) vs 51 ± 12,7 years (range 21 to 72 years) in the control group)
- The number of postmenopausal women (61% in the NL group vs 59% in the control group)
- Glomerular filtration rate, carbohydrate and purine metabolism, body mass index.

Feature indicators calciuria and calciemii, PTH levels (%):

<table>
<thead>
<tr>
<th>Parameters</th>
<th>NL</th>
<th>control</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTH (pg/ml)</td>
<td>61 [39,69,1]</td>
<td>58,3 [42,65,5]</td>
<td>P=0,8580</td>
</tr>
<tr>
<td>25 OH vit D (ng/ml)</td>
<td>17,27 [11,3,21,6]</td>
<td>19,97 [14,9,23,9]</td>
<td>P=0,2774</td>
</tr>
<tr>
<td>CTX (ng/ml)</td>
<td>0,51 [0,218,0,613]</td>
<td>0,43 [0,3,0,68]</td>
<td>P=0,8480</td>
</tr>
<tr>
<td>OK (ng/ml)</td>
<td>24,8 [16,9,31,7]</td>
<td>25,36 [17,5,26,7]</td>
<td>P=0,9792</td>
</tr>
</tbody>
</table>

When comparing patients with NL and control group no significant differences were obtained on the investigated parameters:

- There was an inverse relationship OC level to the level of 25 OH vitamin D NL patients (r = -0.0321, p = 0.0213)

Thus, there were no differences in terms of calcium and phosphorus metabolism and bone metabolism between patients with NL and healthy individuals as a whole. However, attention is drawn to a significantly greater frequency of decreased vitamin D levels in patients with NL. The same trend has been shown in several other works3,4.

In addition, 30% of patients NL showed an increase of PTH, which was of a secondary, and 12% hypercalcemia. Further research is needed on a larger group of patients with varying degrees of NL severity and duration of the definition of the BMD , the incidence of fractures in comparison with the population control .

References


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