A Case report: Hypoparathyroidism, nephrocalcinosis and replacement therapy

Boysan S Nur\textsuperscript{1}, Ozgen Zeren\textsuperscript{2}, Sahin Tuna\textsuperscript{3}

\textsuperscript{1} Department of Endocrinology
\textsuperscript{2} Department of Nephrology
\textsuperscript{3} Department of Radiology

Kahramanmaraş Necip Fazıl City Hospital, Kahramanmaraş, Turkey

Introduction

• The objectives of treatment in hypoparathyroidism are controlling symptoms and maintaining serum calcium in the low-normal range and serum phosphorus within a normal range without developing hypercalciuria and nephrocalcinosis.

• We present a case who has hypocalcemia and hyperphosphatemia and also nephrocalcinosis.

Case Report

Medical history

• A fifty-years old man was admitted to hospital for routine visit.

• At the age of 24, in Neurology department basal ganglion calcification was diagnosed caused by hypoparathyroidism.

• Medical treatment was included oral daily 1,25(OH)\textsubscript{2}D \textsubscript{0.25 mcg}, 1333 IU Vit D, and 2500 mg calcium carbonate and also 880 IU Vit D3.

Laboratory

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Calcium</td>
<td>7.6 mg/dl</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>5 mg/dl</td>
</tr>
<tr>
<td>Parathormon</td>
<td>4 pg/dl</td>
</tr>
<tr>
<td>Creatinine</td>
<td>1.3 mg/dl</td>
</tr>
</tbody>
</table>

Radiology

• Renal ultrasonography showed bilateral extensive medullary hyperdense images diagnosed as nephrocalcinosis.

Treatment

• Medical treatment was changed to daily 1,25(OH)\textsubscript{2}D 0.25 mcg 2x1, 2500 mg calcium carbonate and also 880 IU Vit D3.

• We followed serum calcium and phosphorus monthly, serum creatinine every 3 month and renal ultrasonography every 6 month.

Results of the 6\textsuperscript{th} month

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>Calcium</td>
<td>8.8 mg/dl</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>4.1 mg/dl</td>
</tr>
<tr>
<td>Creatinine</td>
<td>1.3 mg/dl</td>
</tr>
</tbody>
</table>

• Renal ultrasonography showed slightly increased hyper echogenity of medullary more distinctive in the left renal images.

Conclusion

• In autosomal dominant hypoparathyroidism, heterozygous activating mutations of the CaR gene reset parathyroid and kidney causing hypocalcemia and hypercalciuria.

• Vitamin D treatment results in further hypercalciuria and nephrocalcinosis.

• Some literature suggests the use of injectable parathormon(1-34) when nephrocalcinosis developed in the treatment of hypoparathyroidism but some results showed no difference when compared with conventional therapy.

• In addition, parathormon is not approved by FDA for use in hypoparathyroidism in USA because of the unknown risk of osteosarcoma.

• In Turkey we can only use as a drug except of indication with the permission of Health Ministry.

• In this case: changing medical treatment to more potent calcitriol which has a rapid onset and offset rather than Vit D provided us to keep serum calcium level near the lower limit and also some degree of improvement in nephrocalcinosis.