

## **Society for Endocrinology, Clinical Update 2007**

### **A patient with hypocalcaemia**

A 25 year-old woman was admitted to the hospital because of hypocalcaemia. Since 2004, she has had gastrointestinal problems with chronic abdominal pain and frequent diarrhoea. She visited an alternative doctor and he prescribed her a probioticum (Darmocare Infantis) and 2 other alternative drugs (Gastrotra dilut, Angelica tablets). After a few months, 90% of her problems were solved.

Approximately 2 weeks before admission, she noticed brittle nails and since 1 week a loss of hair. Furthermore, since about a year, she frequently has paresthesias of her hands with muscle cramps. She smoked 20 cigarettes a day and used no alcohol. On physical examination, the sign of Chvostek and the sign of Trousseau were positive. Further examination showed a patchy alopecia and brittle nails with transverse grooves.

At that time, she had the following bloodresults: calcium 0.93 mmol/l, albumin: 39 g/l, phosphorus: 2.16 mmol/l, magnesium: 0.8 mmol/l, sodium: 142 mmol/l, potassium: 3.0 mmol/l, creatinine: 99 umol/l, creatin kinase: 901 U/l. The 24-hour urinary calcium excretion was 2.5 mmol/24 hr. The ECG showed a prolonged QT interval. Additional bloodtest were performed: PTH: 0.7 pmol/l, 1,25(OH)vitamin D: 0.84 nmol/l, 25(OH)vitamin D: 64 nmol/l.

The ophthalmologist noticed a slight posterior subcapsular cataract.

The administration of intravenous calcium gluconate was started, in combination with oral calcium carbonate and alfacalcidol. The goal of treatment was to raise the serum calcium concentration to the low-normal range. Her symptoms relieved quickly and the QT interval normalised. After a few months, normal growth of hair and nails restored.

At present, she still uses calcium carbonate and alfacalcidol and she has a normal serum calcium concentration. She stopped using the drugs of the alternative doctor, her gastrointestinal problems are the same as with these drugs.

Above described patient presented with hypocalcaemia as a consequence of a primary hypoparathyroidism. Her serum magnesium and vitamin D concentration were normal, she had never had neck surgery or radiotherapy and there were no signs of an infiltrative disease (ceruloplasmin and ferritin, were normal, HIV-test was negative, normal chest radiography). Hypoparathyroidism can be the result of a gene mutation in the calcium-sensing receptor or in the preproPTH. Mutation analysis of the calcium-sensing receptor has been done, this could not be demonstrated. Autoimmune hypoparathyroidism is a common feature of polyglandular autoimmune syndrome type 1. Patients with this disorder may have autoantibodies directed against the calcium-sensing receptor. Since this is a familial disorder, we asked her parents and 3 sisters to do some blood tests. They all had normal serum calcium, albumin and phosphorus concentrations. Antibodies against the adrenal gland, parietal cells, intrinsic factor, pancreatic islands, endomysium, gliadin, thyroglobulin and TSH were all negative in our patient. Autoimmune hypoparathyroidism seems improbable. We concluded that the hypocalcaemia in this patient is the result of idiopathic hypoparathyroidism.

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Case: suitable for workshop "Disorders of the parathyroid glands, calcium metabolism and bone"

