

# Hyperphosphatemia

As **hyperphosphatemia** we refer to plasma phosphate levels  $> 2.3 \text{ mmol / l}$  in infants, **1.6 mmol / l** in older children.

## Etiology

It occurs as a result of increased exogenous intake or endogenous translocation (eg tumorolysis), increased intestinal absorption, decreased renal excretion or as pseudohyperphosphataemia (analytical causes).

- Hypoparathyroidism
- Pseudohypoparathyroidism
- Hypervitaminosis D
- Hyperthyroidism
- Excessive P dietary intake - dairy products
- Cell lysis syndrome
- Osteoblastic metastases

## Clinical manifestations

Elevated inorganic phosphate in plasma leads to hypocalcemia and further to tetany. Increased  $\text{Ca} \times \text{P}$  product in plasma induces precipitation of calcium salts in soft tissues, hypocalcemia occurs (inorganic phosphate also inhibits  $1\alpha$ -hydroxylation and thus reduces the production of 1,25-dihydroxyvitamin D3  $\rightarrow$  reduced absorption in the intestine). Ectopic calcification is a common complication in patients with chronic renal failure receiving vitamin D supplementation when correction for hyperphosphataemia is inadequate.

## Therapy

The initial treatment is, as in the case of acute hypercalcemia, a **1/1 saline** infusion of 20 ml / kg i.v. as a bolus. Our goal is hyperhydration, where we calculate the physiological daily fluid requirement as twice the norm. We co-administer **furosemide** 1 mg / kg i.v. and we try to keep diuresis 3-5 ml / kg / hour. We reduce the intake of protein in the diet. In the extreme case, the indication is hemodialysis.

## Links

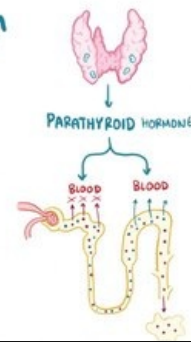
### Related Articles

- Phosphate
- Hypophosphataemia
- Disorders of calcium-phosphate metabolism
- Pathophysiology of bone, calcium and phosphates

### Source

- HAVRÁNEK, J .: Dysbalance of other ions .
- MASOPUST, Jaroslav and Richard PRŮŠA. Pathobiochemistry of metabolic pathways. 2nd edition. Charles University, 2004. 208 p.

### HYPOPARATHYROIDISM



Video in English, definition, pathogenesis, symptoms, complications, treatment.