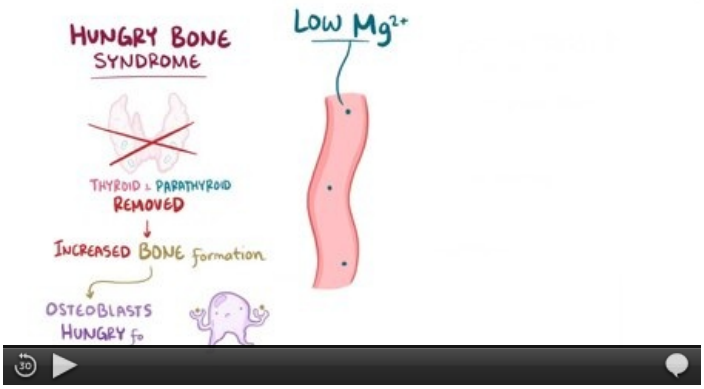
Hypomagnesemia

We indicate **hypomagnesemia** when the value of Mg <0.7 mmol/l.



English summary video - definition, pathogenesis, symptoms, complications, treatment.

Pathophysiology

Hypomagnesemia reduces **PTH secretion** and inhibits the bone response to PTH and therefore leads to *hypocalcemia*. This hypocalcemia is resistant to treatment until we correct the reduced levels of magnesium in the blood. Hyperexcitability of the neuromuscular system is manifested by a decrease in magnesium <0.5 mmol/l. Magnesium deficiency leads to *hypocalcemia* and *hypokalemia*, which cannot be treated only by administering calcium or potassium.

Etiology

- kwashiorkor;
- malabsorption syndromes;
- catabolism;
- long-term parenteral nutrition;
- diarrhoea;
- premature newborn babies;
- urinary Mg losses: Conn's syndrome, Bartter's syndrome, RTA, diuretic therapy;
- tubulointerstitial nephritis of toxic origin.

Clinical Manifestation

Hypomagnesemia is manifested similarly to hypocalcemia with latent or manifest tetany, tremor, convulsions. We can observe personality changes, nausea, vomiting, anorexia. On the ECG we find a prolongation of the *QT interval*.

Treatment

The treatment consists of supplying magnesium in infusions. We administer 10% $MgSO_4$ (1 ml = 0.4 mmol of magnesium) at a dose of 0.2 to 0.5 ml/kg slowly iv with confirmed hypomagnesemia <0.5 mmol/l. However, the need for magnesium is very difficult to estimate. The importance of magnesium administration in the treatment of hypokalemia and hypocalcemia should be borne in mind (**especially if administration of calcium in hypocalcemia does not lead to an adjustment of clinical symptoms!**).

References

External Links

- Hypomagnesémie a EKG (TECHmED) (https://www.techmed.sk/hypermagnezemia-hypomagnezemia/)

Related Articles

- Hypermagnesemia
- Magnesium

Source

- HAVRÁNEK, Jiří: *Dysbalance magnesia*. (upraveno)