

Hypochloremia

$\text{Cl}^- < 95 \text{ mmol/l}$ is defined as **hypochloremia**.

Pathogenesis

Hypochloremia is not always just an expression of chlorine deficiency, i.e. it can be the result of dilution. The most common cause of hypochloremia in intensive care medicine is dilution of body fluids (hyperhydration, congestive heart failure) and prolonged vomiting or aspiration of gastric contents. Hypochloremia develops with subsequent hypochloremic metabolic alkalosis (MAL), which stimulates the kidneys to increase potassium secretion. Dehydration with hypochloremic MAL and hypokalemia results. On the contrary, diarrhea leads mainly to the loss of water and sodium, potassium and bicarbonates with subsequent dehydration and hyperchloremic metabolic acidosis (MAC).

Because electroneutrality adjustments in ABR disorders require reciprocal changes in chlorine to bicarbonate changes, chloride administration is necessary to correct most cases of MAL, whether or not it is accompanied by potassium deficiency. Administration of KCl or NaCl leads to rapid excretion of bicarbonates into the urine and correction of alkalosis.

Etiology

Insufficient intake of chlorine. Excessive losses

- renal;
- extrarenal: GIT, skin.

Some endocrine disorders

- diabetes mellitus
- m. Addison.

Disorders of the indoor environment (MAL)

- congenital chloridorrhoea ;
- Bartter syndrome ;
- diuretic therapy ;
- cystic fibrosis .

Clinical picture

Deficiency of chloride ions does not have its own clinical manifestations.

Diagnostics

When there are changes in the concentration of sodium and potassium, we must also look for changes in the concentration of chlorides. It is sometimes difficult to decide whether a change in serum chloride concentration is due to changes in sodium concentration during dehydration or is the result of a primary disturbance of acid-base balance. Determination of the so-called *corrected chloride* can help. The formula for calculating this value is as follows:

$$\text{Cl}^- \text{ corrected} = \text{Cl}^- \text{ measured} \times (\text{Na}^+ \text{ reference} / \text{Na}^+ \text{ measured})$$

This value is usually in the range of 104 to 108 mmol/l.

A useful indicator is also the Na/Cl ratio in the serum, which does not change or decreases with primary Na disorders, on the contrary, with primary Cl- loss, the Na/Cl ratio increases.

Hypochloremia therapy

We emphasize the elimination of the primary cause, it is usually sufficient to administer a 1/1 physiological solution.

Links

Related Articles

- Hyperchloremia

Source

- HAVRÁNEK, Jiří: *Dysbalance of chlorine* . (edited)