

Correction of energy balance as condition of optimization of immuno-metabolic processes for newborn during inflammatory occurrences

Infant mortality, in many cases, is related with lethal complications for newborns, where mortality because of sepsis or pneumonia has an important role. Cells protective mechanism of newborns' organism is insufficiently able to protect from microbes and their toxins, moreover lymphatic system is immature. That is the main reason of difficult treatment of infectious inflammatory process. Protein synthesis function and reactions of energy balance are reduced among metabolic processes, which determine resistance for negative factors. We investigated remedial effect of preparations, which have influence on energy balance, particularly Amber Acid, natrium, levamisole and splenin.

Liquor of 15% sodium succinate was prescribed for newborns, which have pneumonia, according to their weight in 150mg/kg. Remedial effect of preparation is characterized as more rapid intoxication symptoms, release of respiration insufficiency, hypoxia and disorder of microcirculation. Releases of hypodynamic processes perioral cyanosis, grey colour of skin and its marble undertone and reduction of heart tones are increased. Catarrhal symptoms of upper airway are eliminated sooner; admission period of patients becomes shorter. In the case of complicated pneumonia (20 newborns) hospitalization period became shorter from $25\pm 0,4$ to $23,5\pm 0,43$ ($p<0,01$), in the case of medium difficult pneumonia (12 newborns) – 2 -3 days on average. Sodium succinate was instrumental in increase of specific amount of enlarged subpopulation in the content of blood cells, which changed during pneumonia. The increase of content of B-cells remained because of sodium succinate during pneumonia. It points to effect of preparation for self-aggression. Self-aggression is caused by auto antibodies, which, as it is known, emerge when differential B-cells become plasmic cells. At the same time concentration of differential T-cells were declining in patients' blood. This effect is especially strong in the case of medium difficult pneumonia. It allows to maintain that sodium succinate is able to increase concentration of T-cells in thymus when there is opening for it.

Adequate effect for the energy balance (agreeably to literary information) is seen during the application of levamisole. It is synthetic preparation (isomer of tetromisole). In the case of sepsis we prescribed levamisole for 22 newborns in 2.5 mg/kg during the period of 9 days (three courses in three days with three days brakes between courses). The term of hospitalization became shorter 7 – 9 days on average: from 42.7 ± 4.77 to 34.8 ± 3.58 . Symptoms of general intoxication, focuses of pyaemia, Banti's syndrome disorders of respiration organs and digestive system disappeared much faster. At the same time partial correction of pathological changes of immune system was seen. Unlike sodium succinate, levamisole was a reason of increased T-cell concentration in the blood.

36 ill newborns had been treated by splenine. It is preparation of protein-free origin from spleen of big horned. Splenine was prescribed in 0.5 ml once every day since beginning of disease period. The application of splenine showed big lunge to the normalization of T-cells and lymphocyte concentration in the blood, at the same time big activity, after 7-8 days. The amounts of B-Lymphocytes were high at the beginning of the disease. During the period of splenine application the amount were increasing additionally. However, concentration of immunoglobines of serum M, A and G remained the same. Concentration of authological components of blood were dropping, especially in the case of complicated pneumonia. There was seen big effect of splenine for the normalization of succinic-dehydrogenesis, especially in T and B cells. Preparation adjusted activity of phosphatase in lymphocytes, which increased during the period of disease. Clinical effect of Benin appeared to be expressed more apparently, than treating by first two preparations. That showed as shorter period of newborns' hospitalization in the form of integration: in the case of complicated pneumonia – from

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25.5±0.58 to 16.1±0.55 (p<0.001), in the case of medium difficult pneumonia from 21.1 ±0.14 to 15.6±1.8 (p<0.001).

Thus our experience, in comparison to literary information, allows thinking that application of such remedies, treating newborns which have pneumonia, may be a reason of positive effect of these preparations on energy balance in cells, at the same time there may be positive effect on reactions of immunity, most of them (the real cytotoxicity, phenomenon of reactions of germs) are dependent on energy balance. The facts that we get may be useful in prescribing order for treatment of newborns which has inflammatory occurrences.

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