

Clinical application of preparations of Amber Acid for treatment of pneumonia for newborn

Acute forms of pneumonia are often observed during the first year after birth sometimes resulting in unfavourable outcome. Such patients need rationally developed, antimicrobial, syndromic and disinfectant therapy. Recently metabolic disorders, defining severity, clinical view and outcome of the disease, have been clarified. The present fact invited us to search new remedial preparations, capable of making influence on intracellular energy balance. Sodium succinate is being assigned to such kind of preparations, effectiveness of usage of which has been investigated by us involving 50 children. Its intake has been peroral with the dose of 30 mg/l (24 hours norm, divided into three times of intake). Achieved results all-in-all have showed positive influence of the preparation towards dynamics of basic clinical symptoms of pneumonia and also towards some indicators of energy balance. Already on the 10th day of treatment of pneumonic toxicosis of I and II stage satisfactory state has been observed for 21% of children versus 14, 2% in control group ($p < 0, 05$). The basic group contained only 6, 2% of patients, suffering from severe state (treated with sodium succinate) meanwhile control group contained 15, 7% ($p < 0, 05$) of such kind of patients. Retrogressive development of the number of mentioned clinical indicators occurred the more quickly for patients, treated with sodium succinate. The group treated with sodium succinate has reduced duration of temperature reaction ($5,74 \pm 0,19$ days compared with $7,52 \pm 0,27$ days in control group, $p < 0,05$), anorexia ($3,89 \pm 0,15$ and $6,32 \pm 0,24$ days, $p < 0,02$), disorders of cardio-vascular system ($9,48 \pm 0,11$ and $12, > 21 \pm 0,17$ days, $p < 0,05$) and toxicosis ($10,51 \pm 0,21$ and $12,74 \pm 0,14$ days, $p < 0,02$).

Comparison of results, achieved under identification of indicators of energy balance have showed significant increase of activity of mitochondrion enzyme of succinate dehydrogenase within lymphocytes ($20, 18 \pm 0, 62$ versus $17, 22 \pm 0, 54$ of formazan granules on a single lymphocyte, $p < 0,005$) and also slightly increased ATP level ($492, 17 \pm 17, 21$ versus $486, 25 \pm 26, 34$ mkmol/g, $p < 0,05$). The present facts evidence activation of oxidation processes, accompanying improvement of energy production under the influence of sodium succinate.

Analysis of acid-base balance, carried out one week later since the beginning of the therapy have showed less expressed disorders in the basic group compared with the control group. Before discharge from the hospital, stable normalization of acid-base balance has been observed with 90% of children, treated with sodium succinate which significantly gets ahead of indicators of control group (77%). More well-marked influence of sodium succinate towards dynamics of the process and indicators of energy balance has been observed under its application in the event of prolonged course of pneumonia treatment. Appetite and well-being have been significantly improved already on the 2nd week in line with activation of motion behavior. Physical changes used to become less long-lasting ($15, 31 \pm 0, 13$ versus $20, 51 \pm 0, 29$, $p < 0, 02$). Restoration of normal cardiac activity occurred significantly with children from the basic group ($15, 44 \pm 0, 31$) compared with control group ($17, 16 \pm 0, 32$), $p < 0, 05$. Average weight increase during the period of treatment for children treated with sodium succinate comprised 684 ± 50 g versus children of control group 320 ± 40 g, ($p < 0, 05$).

Achieved results enable to assume about significant therapeutical effectiveness of sodium succinate and give ground to recommend it for clinical application during the treatment of pneumonia for children.

Authors

Reznik B.I Krainaja Z.V

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