



 Research Article

EFFICACY OF LYMPHOTROPIC ADMINISTRATION OF BACTOX (AMOXICILIN) IN THE TREATMENT OF CHRONIC PNEUMONIA IN CHILDREN

Journal Website:
<https://theamericanjournals.com/index.php/tajmspr>

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Submission Date: February 10, 2022, **Accepted Date:** February 20, 2022,

Published Date: February 28, 2022 |

Crossref doi: <https://doi.org/10.37547/TAJMSPR/Volume04Issue02-02>

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ABSTRACT

Lung inflammation, also called pneumonia, is a pathological process that affects lung tissue. It occurs in both adults and children. Inflammation of the lungs needs urgent treatment, even if it is not severe. Pneumonia is mainly caused by an infection - an invasion of the lung by pathogenic organisms. Therefore, the use of antibiotics for pneumonia in adults and children, together with complementary medicines, is the mainstay of treatment.

KEYWORDS

Pneumonia, children , antibiotics, Bactox (Amoxicillin).

INTRODUCTION

One of the promising methods in modern medicine is regional lymphatic antibiotic therapy (RLAT) and regional lymphostimulation (RLS). In our studies, we used Bactox (amoxicillin), a protected penicillin antibiotic, in the traditional and main groups of patients. Bactox was administered intramuscularly to the patients of the traditional group, and to the main group - regionally by lymphotropic route.

PURPOSE OF THE PRESENT STUDY

To determine clinical and immunological efficacy of Bactox (Amoxicillin) in chronic pneumonia in children.

MATERIALS AND METHODS OF STUDY

Bactox was used in 67 children with chronic pneumonia, antibiotic was administered at exacerbation of bronchopulmonary process after identification of pathogenic microflora isolated from sputum. Microbial sensitivity was tested by the disc-diffusion method to determine the most effective drug. All examined children with chronic pneumonia were divided into 2 groups: Group 1 consisted of 37 patients who received Bactox with intramuscular administration in a dose of 50 mg/kg 2 times a day, Group 2 consisted of 30 children who received antibiotic by pretracheal lymphatic route in a dose of 25 mg/kg once a day. RLATs were given once, in severe cases twice a day. The daily dose of Bactox was 1/2 of the dose administered by the conventional route of administration. The total number of manipulations ranged from 8 to 12 injections. Heparin 50 U/kg of child weight was used as lymphostimulator.

RESULTS AND DISCUSSION

The effectiveness of therapy was evaluated by the dynamics of clinical and paraclinical data.

It was found that the main symptoms of the disease in the group of children treated with RLAT were relieved within a shorter time compared to patients treated with traditional methods.

Signs of intoxication disappeared on 12.8 ± 0.8 days, compared to 18.3 ± 1.3 ($p < 0.01$), cough duration and sputum discharge diminished on 9.6 ± 0.9 days versus 15.2 ± 0.3 ($p < 0.05$), dyspnea and cyanosis on 7.1 ± 0.1 day versus 9.2 ± 0.6 days ($p < 0.01$), 6 days ($p < 0.01$), percussive changes in lungs on 8.7 ± 0.4 day vs 13.8 ± 0.5 ($p < 0.01$), auscultatory findings (rales and respiratory changes) on 11.1 ± 0.3 day vs 15.2 ± 0.2 ($p < 0.01$), duration of hospitalization on 12.3 ± 0.2 day vs 18.9 ± 0.9 ($p < 0.01$).

Immunological studies in children with chronic pneumonia showed a marked decrease in cellular immunity and phagocytic activity of neutrophils, indicating secondary immunodeficiency. The emergence of exacerbation of the disease contributes to the perversion of local immune reactions, up to the development of secondary immunodeficiency. Application of lymphotropic antibiotic administration of Bactox in children with chronic pneumonia contributed to a more rapid recovery of both absolute and relative numbers of T-lymphocytes and their subpopulation. In children group receiving RLAT, immunoglobulin content reliably decreased, while in the control group it was 1.2 times higher than in healthy children, indicating the continuing activity of the inflammatory process in the lungs. It was also interesting to evaluate the results of lung tissue antigen binding lymphocyte (ALA) tests against a background of different treatments: ALA levels remained high ($p > 0.05$) in patients treated with conventional therapy, while ALA levels significantly and significantly decreased ($p < 0.01$) in children who received RLAT at discharge, indicating a more complete

removal of the inflammatory process in the lungs when using RLLT.

Under the influence of lymphotropic administration of Bactox the concentration of circulating immune complexes sharply decreased up to 132,2±8,4%, and the concentration of CIC significantly changed in comparison with the data before the treatment and was 154,1±9,4%. It should be noted that on the background of conventional therapy, immunological parameters improved only in 68.7% of patients, while the application of RLLT in 88.9% of patients.

Overall, the effect of clinical and immunological correction was better with the proposed method of treatment than with conventional treatment. The antibacterial effect of RLAT with Bactox was accompanied by an immunostimulatory effect, the mechanism of which was related to the lymphostimulatory effect of heparin. Lymphostimulation in chronic pneumonia in children promotes the outflow from tissues of toxic substances, their neutralisation in lymph nodes, restoring the immune protection.

CONCLUSIONS

Thus, our clinical and immunological investigations testify to considerable effectiveness of RLLAT in complex treatment of chronic pneumonia in children.

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