

* mail to: 660062, Krasnoyarsk, Kurchatova Str., 17

УДК 616.24-002-085.281

INDIRECT LYMPHOTROPIC THERAPY FOR PNEUMONIA

I. M. BORISOV¹, T. G. SHAPOVALOVA², P. E. KRAYNYUKOV³

¹ 19 Military Hospital R.S.P.F., Znamensk

² Razumovsky Saratov State Medical University, Saratov

³ 1602 District Military Hospital, Rostov-na-Donu

Introduction

The problem of pneumonia remains one of the most topical problems in modern medicine, both because of high morbidity, and because of the large number of wasps, complications of forms, despite the constant improvement of methods of diagnosis and treatment. Morbidity in the Russian Federation at present is from 5 to 20 cases per 1 thousand persons per year [9]. Remains a high incidence of pneumonia in the Russian Federation Armed Forces military personnel, military service by conscription (over 30 ‰), and the highest incidence rates recorded in the first half of the military services [7].

At the present time is clearly defined list of antibiotics that are all over the world consider it possible to use for empirical treatment of pneumonia. The choice of antibiotic from a specified list is determined by the range of actions, which include the major pathogens of pneumonia, as well as the peculiarities of pharmacokinetics / pharmacodynamics of drugs. In addition, the appointment of an antibiotic selection daily dose and multiplicity of introducing into account the severity of the pathologic process in lung tissue and data on the local sensitivity to antimicrobial agents of pneumonia in different categories of patients [7, 9].

The problem of managing patients with severe pneumonia and the presence of complications of the disease has prompted us to explore new ways of administration, which would significantly increase the concentration of antibiotic in the inflammatory foci and the self-mym increase its efficiency.

Number of studies proved that the effectiveness of antibiotics increases the directed their concentration increases in the lymphatic system [1, 2, 4, 5]. Traditional methods of administration do not allow sufficient in the lymph and of stable concentrations [8, 10]. Absorption of low molecular weight drugs, to which the eye is most of the antibiotics of subcutaneous fat and muscle tissue is carried out mainly in the circulatory system. Intramuscular

and intravenous routes of administration are accompanied by binding of antibiotics, blood proteins, rapid elimination from the body and enters the lymphatic system only a small part of them. In this situation, the creation of high concentrations of antibiotic in the blood in most cases is fraught with the development of undesirable side reactions [4].

One possibility for the delivery of medicines, including antibiotics, to the place of the pathologic process in lung tissue and a significant increase in the concentration of antibiotic in the area of inflammation is the use of lymphatics by indirect lymphotropic therapy (ILTT) in which percutaneous injection is performed in the anatomical region is richly endowed with superficial lymph collectors, the administration of drugs carried out in kletchatochnye space located close to the lesion with subsequent preferential resorption of the lymphatic system [3, 5, 6, 8].

The lymph vessels that drain this kletchatochnoe space, leech-proof falls into the lymphatic system, where a retrograde post-shock lymph Paet in the inflammatory focus and creates a higher concentration at the source of inflammation-than intramuscular or intravenous method of administration [3, 10]. In addition, the penetration of antibiotics into the lymphatic system, provides a direct impact on the antibiotic agents in the lymphatic bed [8]. With the introduction of lymphotropic drugs directly to turn out the action on the cell, interstitium and stored in the body much longer than the intravenous or intramuscular methods of administration that can reduce the doses of drugs [2, 3].

The method of indirect lymphotropic therapy provides a preliminary introduction of the drug-conductor. With this purpose the substance, which, by changing the conditions of permeability of lymphatic capillaries, can improve drug delivery in the link "interstitial-lymphatic capillaries. The most widely used enzyme preparations, drugs affecting coagulation and fibrinolysis (lidazy, terrilitin, trypsin, chymotrypsin). Enzymes, breaking down glycosaminoglycans, increased permeability of the connective tissue for water and dissolved substances and thereby facilitate the movement of drug in the intercellular spaces, which leads to increased penetration of antibiotics into the lymphatic system and the saturation of the lymph nodes [1, 10].

Preliminary subcutaneous lidazy promotes concentration of antibiotic introduced in the same area in the central lymph and exceeds the concentration of antibiotic administration without first applying lidazy [5].

Antibiotic from the lymph into the blood stream. Due to the fact that the rate of movement of lymph through the vessels is small, the antibiotic enters the blood from the lymphatic system periodically, in small portions, which creates a certain concentration of drug in the lymphatic system and more long-term supports in the blood [3, 4, 10]. The concentration of drugs in peripheral lymph, lymph nodes, organs and tissues in 4-15 times higher than the intramuscular

and intravenous injection [8]

The aim of the study. Comparative analysis of treatment and evaluation of the effectiveness of the method of indirect lymphotropic therapy (ILTT) in the treatment of patients with pneumonia.

Materials and methods. The observation of 90 patients with pneumonia - men aged 18 to 23 years ($20 \pm 1,9$). Patients were hospitalized in the pulmonary department Military Hospital from 2007 to 2009.

The main group ($n = 44$) consisted of patients with pneumonia, which antibiotics were administered according to the method ILTT, and the comparison group ($n = 46$) consisted of patients who carried antibiotikoterapiya intramuscular way.

Localization of the pathological process in the lung tissues of the patient as follows: pneumonia in the middle lobe of right lung in 27 (30, 21%) patients, pneumonia in the upper lobe of left lung - 15 (16, 99%) patients, pneumonia in the lower lobe of right lung - 17 (18, 87%) patients, pneumonia in the lower lobe of left lung - 31 (33, 93%) patients.

Method lymphotropic administration was as follows: on the boundary of the mammary gland and the lateral surface of the chest in the defeat of the upper lobes and middle lobe of right lung, and at the subscapular and shoulder areas of the shoulder line in the defeat of the lower lobes on the affected side, subcutaneous injection after treatment with the operational field solution of alcohol with a needle for intramuscular injection at a depth of 1, 0 cm, first introduced 32 lidazy ED solution, then, without removing the needle, in 1 - 2 minutes - with an antibiotic solution (0, 5 g of ceftriaxone once-reference in 2 ml of 2% solution lidocaine). The procedure was performed 1 time per day.

The course of treatment was 5 injections. In all cases, ceftriaxone was used, since it was determined to high sensitivity of microorganisms. Antibiotics are used in monotherapy. In the comparison group of ceftriaxone administered intramuscularly for 1, 0 grams per day.

Patients in both groups had been appointed etiopathogenetic and symptomatic therapy in accordance with the standards of treatment of this disease. In addition to antibacterial drugs, patients received arterial mucolytics, fever and cold preparations, a complex of physical therapy and physiotherapy. All patients were in hospital until clinical and radiographic resolution of pneumonia.

Statistical processing of results of research carried out using a software package Excel 2007, and the program Statistica 6.0. For processing the experimental data obtained using the estimate of reliability between-group differences using the Student t-test for independent samples. Intergroup differences were considered significant at $p < 0, 05$.

Results and discussion. The results confirmed the effectiveness of injections of antibiotics method of indirect lymphotropic therapy. Patients who underwent ILTT, there was acceleration of the dynamics of clinical-ray and laboratory data. Thus, the study group significantly faster

stopped signs of infectious intoxication and other indicators of clinical course of pneumonia (cough, chest pain, fever, general weakness), 2 - 3 days earlier were stopped and objective signs of disease (the shortening of percussion tones over an area of destruction lung tissue, the weakening of the respiratory noise, wet finely wheezing) than in patients receiving antibacterial therapy intramuscular route of administration. .

As evidence of reduced toxicity, including an earlier decline of leukocytes and erythrocyte sedimentation rate, combined with a tendency to an earlier decrease in cough and sputum, then the latter can be regarded as favorable clinical symptoms. In the study group was complicated by pneumonia, acute respiratory failure of I degree, only 3 persons (5, 6%), whereas the comparison group in 5 patients (10, 4%) was found acute respiratory failure of I degree and in 2 patients (2, 6 %), respiratory insufficiency of II degree. In the comparison group in 2 patients (2, 6%), pneumonia complicated by infectious-toxic shock and one patient - exudative pleurisy.

Suitable for a pathological process in patients of the group, coupled with the elk and less painful way to deliver an antibacterial drug in the organic mechanism, which also contributed to the rapid recovery of patients.

X-ray resolution of pneumonia patients from group occurred at 14, 2, ± 1 , 1 day, length of hospital stay was 18,1 $\pm 1,7$ days., whereas the corresponding figures in the comparison group consisted of 17, 9 ± 1 , 4 and 22 , 8 ± 1 , 6 day respectively ($p < 0, 05$).

Conclusion. Thus, the results gave reason to believe that the application of indirect lymphotropic therapy in pneumonia effectively due to more rapid suppression of pathogenic organisms in the lung tissue, and earlier onset of repair processes and tissue regeneration. In addition, long-term preservation of a high concentration of antibiotic in the lymphatic system has allowed to halve the daily dose of antibiotic. Made significant pharmaco-economic impact by reducing the exchange rate in two doses injected antibiotic, shorten treatment time and hospital stay.

The proposed approach would not only improve treatment results and substantially reduce the cost of treatment, he and improve the quality of hospital stay due to the exclusion of painful intramuscular injections of antibiotics and reduce the length of hospital stay.

SUMMARY

In order to study the treatment results and evaluate the effectiveness of the method of indirect lymphotropic therapy (ILTT) in the treatment of patients with pneumonia was a comparative analysis in groups of patients with pneumonia that antibiotics were administered according to the

method ILTT (n = 44) and patients that antibiotics therapy held the intramuscular route (n = 46).

Patients who underwent ILTT, there was acceleration of the dynamics of clinical and laboratory data significantly faster than stopped signs of intoxication and other indicators of clinical course of pneumonia in 2 - 3 days earlier were stopped and objective signs of disease than in patients receiving antibacterial therapy with the intramuscular route of administration. X-ray resolution of pneumonia in patients who underwent ILTT, occurred significantly faster, and length of hospital stay was significantly shorter than similar indicators of patients who received intramuscular antibiotics therapy way. Application ILTT allowed to halve coursework dose antibiotic.

Keywords: pneumonia, indirect lymphotropic therapy, soldiers

References

1. Levin, U.M. Fundamentals of medical Lymphology / U.M. Levin. – M. : Meditsina, 1986. – 288 p.
2. Levvin, U.M. Endolymphatic and lymphotropic therapy / U.M. Levin, S.U. Dzumbaev, V.M. Bujanov. – Tashkent: Meditsina, 1987. – 111 p.
3. The lymphatic system and lymphotropic tools: A guide for practitioners / Edited by U.I. Borodin, A.V. Ephremov, A.A. Zykov. – Novosibirsk, 1997. – 136 p.
4. Fundamentals of medical Lymphology / Edited by U.M. Levina, R.G. Muradov, E.V. Samoylov. – M.: Meditsina, 1996. – 277 p.
5. Fundamentals of general clinical Lymphology. Practitioner new ideas and techniques of evidence based medicine / Edited by U.M. Levin. - M.: Meditsina, 2003. – 450 p.
6. Patent 2391105 RU, (51)MPK A61K31/542 (2006.01) A61K38/47 (2006.01) A61P11/00 (2006.01). A method of treating pneumonia / I.M. Borisov, P.E. Kraynyukov, T.G. Shapovalova, M.S. Borisova. - № 2009100899/14; Stated 11.01.2009; Publ. 10.06.2010, Bull. № 16.
7. Sinopalnikov, A.I. Community-acquired respiratory tract infections /A.I. Sinopalnikov, R.S. Kozlov. - M.: Ltd. « Prime MT », « Our Town », 2007. – 352 p.
8. Chilingirov G.S. Prospects of application of lymphotropic therapy in medical practice / G.S. Chilingirov, L.I. Leskin, L.I. Junovidova // The Almanac of clinical medicine. – M. – 2000; V. 3. – P. 241 – 249.
9. Chuchalin, A.G. Pneumonia / A.G. Chuchalin, A.I. Sinopalnikov, L.S. Stratchounski. – M.: MIA, 2006. – 461 p.
10. Endolymphatic antibiotic therapy / Edited by R.T. Panchenkov, U.E. Vyrenkova, I.V. Yarema. – M.: Meditsina, 1984. – 240 p.

About the authors

Borisov Igor Michaylovich, Candidate of Medicine

Head of Pulmonology, 19 Military Hospital R.S.P.F., Znamensk

Address: 416540, Astrakhan Region, Znamensk, st. Lenin, 31

Phone: 8(85140)22762, mobile phone: 8902 1113 492.

E_mail: askbo@mail.ru.

Kraynyukov Pavel Evgenjevich, Candidate of Medicine

Head of 1602 District Military Hospital, Rostov-na-Donu

Address: 344064, Rostov-na-Donu, st. Dachnaja, 10.

Phone: 8(863)2781519, mobile phone : 8-928-212-33-59,

E_mail: Krainukov68@mail.ru.

Shapovalova Tatjana Germanovna, Doctor of Medicine

Razumovsky Saratov State Medical University, Professor of Department of Therapy of Pediatric and Stomatological Faculties, Saratov

Address: 410012, Saratov , st. Bolshaja Kazachja, 112

Phone: 8(8452)502396, mobile phone : 8927 1058 499

E_mail: t.g.shapovalova@gmail.com.