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Effective use of lipin in anemic complicating COPD treatment in patients who had had lung tuberculosis

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Эффективность использования липина в лечении ХОЗЛ с анемическим синдромом у лиц, перенесших туберкулез легких

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According to forecasts (Global Burden of Disease Study) the chronic obstructive pulmonary disease (COPD) will have become the third most common cause of death in the world by 2020 [4]. One of the important points of documents, regulating the procedure of diagnosis and treatment of COPD, such as GOLD and ATS / ERS recommendations are evidences that COPD is characterized not only by lung impairment, but also by systemic manifestations [2, 3, 4].

In the past decades major systemic manifestations of COPD have related to anemic syndrome (anemia of chronic diseases) the development of which is initially associated with subclinical systemic inflammatory response [6]. The presence of anemia in patients with COPD is regarded as one of the important sign of severity of the disease (increase of hypoxic syndrome) and requires a corresponding correction of the treatment [5]

To correct hypoxic syndrome in various diseases, including bronchopulmonary pathology, an antihypoxic drug Lipin is used (i.e. phosphatidylcholine (lecithin), phosphatidylcholine liposomes) which is a joint production of "BIOLEK" (Kharkov) in collaboration with the Institute of Pharmacology and Toxicology, Academy of Medical Sciences of Ukraine.

Lipin inhibits lipid peroxidation in blood and tissues,

supports the activity of antioxidant systems of the body, shows membrane protective effect, acts as a nonspecific disintoxicant, increases the innate immunity, as well as provides antihypoxic effect. It also contributes to the increase in the rate of oxygen diffusion from the lungs into the blood and from the blood into tissues or normalizes tissue respiration, restores the functional activity of the endothelial cells, improves microcirculation and rheological properties of blood. Application of the drug depends on the severity of the disease and the nosology ranging from oral, intravenous, rectal or course of inhalations.

The clinical efficiency of the medication has been proved to treat acute and chronic respiratory failure of various origins among adults and children, including newborns with respiratory disorders as a consequence of perinatal hypoxia and birth asphyxia (the most obvious effect among prematurely born babies).[1]

The aim of the study is a scientific justification for the use of phosphatidyl choline liposomes to correct anemia and hypoxic syndrome as well as to improve cytokine

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Dynamics of FEV1 and hemoglobin levels in patients with anemia complicated COPD III under the influence of Lipin injections are presented below, in %.

Groups	Stages of the investigation	Stat. data	FEV1, % of overall	Hemoglobin, g/l
Patients with COPD III stage with Normocytic-normochromic anemia. Underwent the course of Lipin injections	1st stage (upon admission to hospital)	M ± m n p p1	33,35 ± 0,90 11 < 0,001 –	119,18 ± 0,42 11 < 0,001 –
	2nd stage (upon discharge from hospital)	M ± m n p p1	42,21 ± 0,98 11 < 0,001 < 0,001	126,10 ± 0,43 11 < 0,001 < 0,001
Patients with COPD III stage with Normocytic-normochromic anemia. No Lipin injections were given	1st stage (upon admission to hospital)	M ± m n p p1	35,33 ± 0,86 7 < 0,001 –	117,40 ± 0,69 7 < 0,001 –
	2nd stage (upon discharge from hospital)	M ± m n p p1	38,37 ± 1,27 7 < 0,001 < 0,1	118,30 ± 0,70 7 < 0,001 < 0,5
Healthy people		M ± m n	103,25 ± 2,08 19	139,73 ± 0,66 19

Note: p – variability of data as contrasted to the group of healthy individuals, p1 – the variability of data as contrasted to the 1st investigation phase in the same subgroup of patients

homeostasis imbalance in treatment of COPD patients with anemia who had overcome lung tuberculosis.

The article presents the research results of the clinical effectiveness of applying Lipin for the correction of anemia and disorders of respiratory function in COPD patients who had had lung tuberculosis.

Resources and methods

We examined 18 patients with COPD (III stage) who had had lung tuberculosis and who had the level of hemoglobin < 135 g/l (normochromic, normocytic anemia with no reticulocytosis). Remission of chronic bronchial obstruction of the disease was obvious in such patients. 19 healthy donors of a certain age group were under control (healthy persons).

Clinical diagnosis of COPD was established on the basis of data of comprehensive clinical and x-ray examination. The indices of respiratory function were taken into account. Therapy was carried out in accordance with the Protocol of medical care of patients with COPD and was performed comprehensively. Furthermore, 11 patients received intravenous injectable Lipin 2 times a day in a dose of 15 mg/kg of body weight per injection. The course of treatment was 10 days, the control group consisted of the remaining 7 patients from this group.

For the statistical description of samples, evaluation methods of variable ranges have been applied. The accuracy of differences between the relative frequencies was determined by the calculation of student's t-test.

Results assessment

Results of the study of the dynamics of FEV1 and hemoglobin levels in patients undergoing the course of Lipin injections are presented in Table 1.

We discovered (Table 1) that patients with COPD III complicated by anemic syndrome had demonstrated that under the influence of the course of injectable phosphatidyl choline liposomes (Lipin) the level of FEV1 has increased by 26,6% (p1 < 0,001), the level of hemoglobin was 5,8% (p1 < 0,001). Patients who had not been given Lipin injections didn't display any obvious changes in indices.

Conclusions

Introduction of Lipin in the comprehensive treatment of anemic complicating COPD III patients who had had lung TB allows to increase efficiency of carried-out therapy due to stimulation of anti-hypoxemic mechanisms.

Application of this medication statistically and authentically raises hemoglobin level in plasma of blood in this group of anemic complicating COPD III patients who had had lung TB

Being given Lipin injections, COPD patients with anemic syndrome who had suffered from lung TB have shown significant increase of indices of the basic spirometric parameters which helps us determine FEV1, the determinant of COPD severity.

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М.Н. Гришин, В.А. Лимарев, Ю.А. Зайцев, Е.О. Корчагина

У перенесших туберкулез легких больных хроническим обструктивным заболеванием легких (ХОЗЛ) с анемическим синдромом изучены динамика ОФВ1 и уровня гемоглобина под влиянием курса инъекций фосфатидилхолиновых липосом (липина). Установлено, что у больных ХОЗЛ III степени тяжести под влиянием курса инъекций липина – возрастают величина ОФВ1 и уровень гемоглобина.

Ключевые слова: фосфатидилхолиновые липосомы, липин, хроническое обструктивное заболевание легких, анемия, туберкулез легких.

Ефективність використання ліпіну в лікуванні ХОЗЛ з анемічним синдромом у осіб, котрі перенесли туберкульоз легенів

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У хворих, котрі перенесли туберкульоз легенів з хронічним обструктивним захворюванням легенів (ХОЗЛ) з анемічним синдромом вивчені динаміка ОФВ1 і рівня гемоглобіну під впливом курсу ін'єкцій фосфатидилхолинових ліпосом (ліпіну). Установлено, що у хворих із ХОЗЛ III ступеня тяжкості під впливом курсу ін'єкцій ліпіну – зростають величина ОФВ1 і рівень гемоглобіну.

Ключові слова: фосфатидилхолинові ліпосомы, ліпін, хронічне обструктивне захворювання легенів, анемія, туберкульоз легенів.

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Patients with anemia complicating COPD who had overcome lung TB have been examined to find out the dynamics of FEV1 and hemoglobin level under the influence of the course of injectable phosphatidyl choline liposomes (Lipin). It was discovered that FEV1 indices and hemoglobin level had significantly increased among patients with COPD III under the influence of Lipin injections.

Key words: phosphatidyl choline liposomes, Lipin, chronic obstructive pulmonary disease, lung diseases, anemia, lung TB