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## VIOLATION OF SPECIFIC INDICATORS PIGMENT AND LIPID METABOLISM IN EXPERIMENTAL PNEUMONIA IN AN IMMOBILIZATION STRESS AND CORRECTION OF CORVITIN

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### Abstract

The aim of study was to investigate the features change cholesterol and bilirubin in the blood serum of guinea pigs (males) with experimental pneumonia (EP) under conditions of immobilization stress (IS) and prove the feasibility of Corvutin. The study was conducted on 48 guinea pigs (males) were divided into 6 groups. The research results make it possible to detect liver damage in terms of IS EP and in violation of its functional state. Application domestic preparation Corvutin led to a significant reduction in the changed parameters bilirubin and cholesterol under conditions of formation of EP and IP, which indicates its positive corrective effect.

**Keywords:** experimental pneumonia, stress, liver, cholesterol, bilirubin.

## **INTRODUCTION**

We know from the literature that in various forms of pneumonia can occur damage to many organs, including one of the most vulnerable is the liver. The cause of the violation consider damage membranes and increase their permeability to intracellular enzymes. The latter, as we know from the literature may appear in the blood, leaving the damaged tissue [2,3]. The liver is the central authority, which produced a general exchange pool for the metabolism of proteins, fats and carbohydrates. Another important function of the liver is its close connection with blood plasma, liver indirectly contributes to maintaining the balance of fluids and many transport processes occurring in plasma. This body formed phosphatides and most of the plasma cholesterol. The liver performs three important functions in the metabolism of bilirubin: capture bilirubin from the blood of liver cells, it binding with glucuronic acid bilirubin are connected and the allocation of liver cells in bile capillaries. The liver actively involved in lipid metabolism. So, cholesterol synthesis actually takes place in the liver and intestine, which produce more than 90% of total cholesterol.

In this context, the aim of our study was to investigate the features change cholesterol and bilirubin in the blood serum of guinea pigs (males) with experimental pneumonia (EP) under conditions of immobilization stress (IS) and prove the feasibility of Corvitin.

## **MATERIALS AND METHODS**

The study was conducted on 48 guinea pigs (males) weighing 180-220 g which were divided into 6 groups: the first group - control (intact) animals (8); The second group - the animals with VC and IC (8) on the 1st day before treatment; the third group - the animals with VC and IC (8) on the 3rd day prior to treatment; fourth group - the animals with VC and IC (8) on the 6th day before treatment; a fifth group - the animals with VC and IC (8) on the 10th day prior to treatment, the sixth group - animals VC and IC (8) on the 10th day after treatment Corvitin who introduced intramuscularly 40 mg / kg for 10 days.

The experimental model reproduced pneumonia by intranasal infection of animals culture of *Staphylococcus aureus* method VN Shlyapnikov, T.L.Solodova, S.A.Stepanova [4]. Immobilization stress method P.D.Horizontova, O.Y.Belousova (1983) by fixing the nontraumatic animal on the back for 3 hours [1].

Then decapitated intact animals under ether anesthesia and guinea pigs on the 1st, 3rd, 6th and 10th day of EP and IP before and after treatment Corvitin (on the 10th day of the experiment).

Determination of total bilirubin in serum was performed by Young DS, Pestaner LC (1975) [6], the determination of total cholesterol in serum conducted method Rifai N., Bachorik PS, Albers JJ (1999) [5].

Processing digital data conducted by the method of variational statistics using Student's t test.

## RESULTS AND DISCUSSION

The results showed that the content of bilirubin in the blood increases already on the 1st day of VC in terms of IP 104.5% ( $P < 0.05$ ) 115.5% ( $P < 0.05$ ) 116.0% ( $P < 0.05$ ) and 135.5% ( $P < 0.05$ ), respectively 1 - shu, 3rd, 6th and 10th day VC and IC against a group of intact animals, indicating the development of hyperbilirubinemia (Fig. 1).

Thus, on the basis of the data you can think of that when VC and IC pigment disturbed liver function, displayed at the level of bilirubin in the blood serum.

Has undergone significant changes in cholesterol at the 1st day experimental formation pneumonias in conditions of immobilization stress, its level in serum increased by 90.0% ( $P < 0.05$ ) and 114.0% ( $P < 0.05$ ) 119.0%

( $P < 0.05$ ) 128.0% ( $P < 0.05$ ), respectively on the 1st day, 3 - rd, 6 - and 10 one - day one EP and IS against a group of intact animals. These results show the development of hypercholesterolemia (Figure 1).

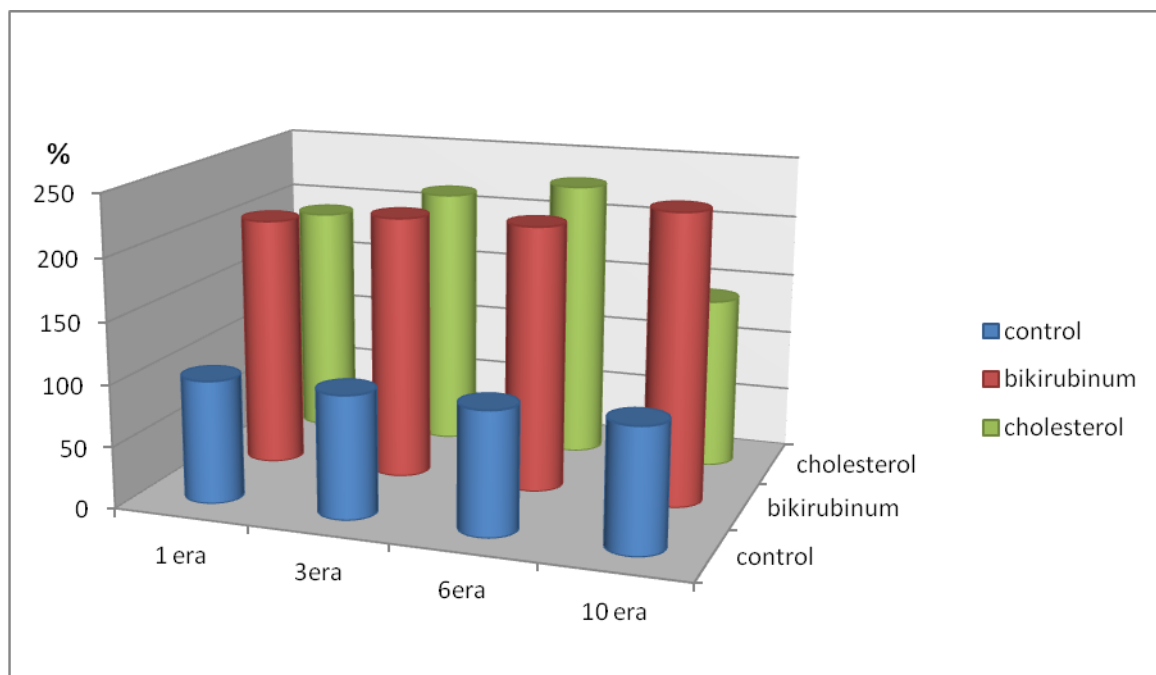


Fig. 1. The level of some indicators of pigment and lipid metabolism in the blood dynamics of the EP and IC (% of control).

After treatment Corvitin blood 6th group of animals we observed a significant decrease of bilirubin to 27.4% ( $P < 0.05$ ) and cholesterol to 35.0% ( $P < 0.05$ ), respectively, compared with a group of guinea pigs with EP and IP (group 5) to treatment (Figure 2).

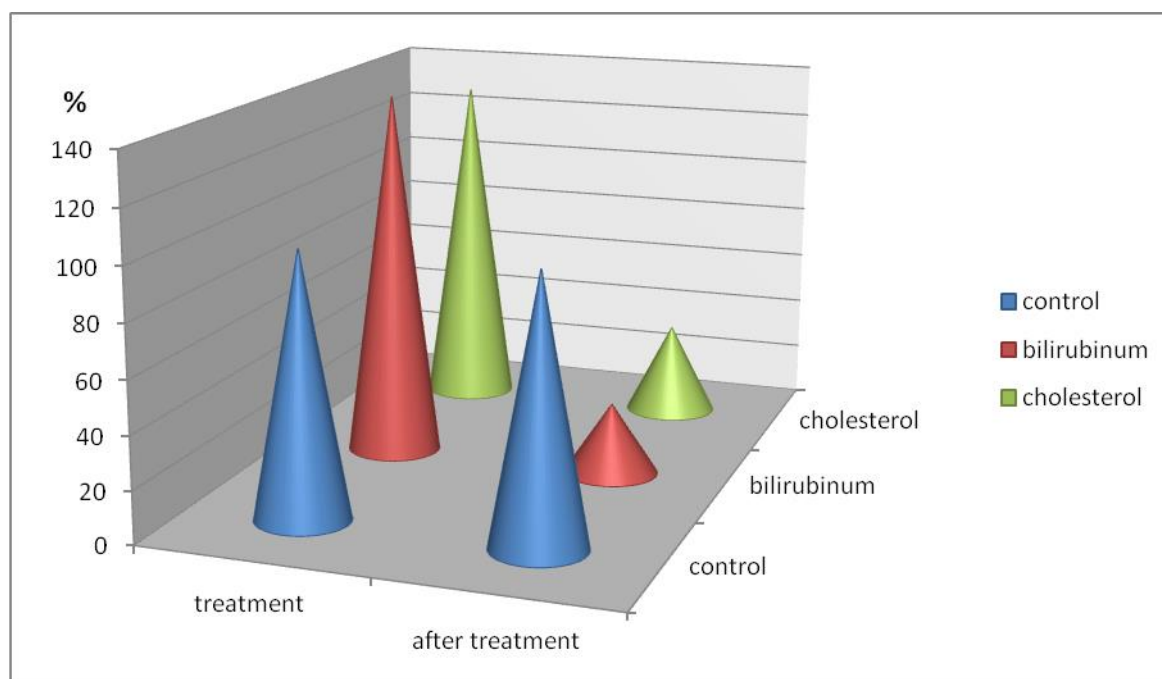


Fig. 2. Corvitin The impact on the level of some indicators of pigment and lipid metabolism on the 10th day VC and IC before and after treatment Corvitin (% of control).

### Conclusion

Thus the research results make it possible to detect liver damage in terms of IS EP and in violation of its functional state. High levels of bilirubin and cholesterol suggests the presence of a syndrome that violate the integrity of hepatocytes caused by the negative impact of VC in terms of IP. Application domestic preparation Corvitin led to a significant reduction in the changed parameters bilirubin and cholesterol under conditions of formation of EP and IP, which indicates its positive corrective effect.

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