

**CORRECTION OF SECONDARY IMMUNODEPHISATE BY ACUTE TOXIC
HEPATITIS TO "IMMUNOKOR" DRUG****Akram Amirculovich Suyarov***

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ABSTRACT

In this study has been shown that substance of polysaccharides chosen from extract *Bidens tripartitae* and tablets "Immunokor" in 1,28-1,55 times raise the total number antibodyproducing cells in spleen of the mouses with acute toxic hepatitis (ATG) in experiment. Substance of polysaccharides and tablets "Immunokor" realistically increase the number of erythrocytes in 1,14-1,18 times, but number of leukocytes raise in 1,18-1,26 times in peripheral blood of mouses with ATG.

KEY WORDS: substance of polysaccharides, tablets "Immunokor", antibodyproducing cells, acute toxic hepatitis, erythrocytes, leukocytes.

INTRODUCTION

The results of the recent Global review carry (WHO/TRM) in thread on attitude national politics on public and additional/alternative medicine and regulation of the medicinal facilities vegetable origins Denmark, called on in 2003 are indicative of that that European market of the medicinal facilities of the vegetable origin steadily to increase. For instance, since 1999 on 2001 volume of sales medicinal facilities of the races plants of the origin increased on 22% in Czech Republic, doubled in Turkmenistan, and increased on 170% in Bulgaria. At present time European market is considered single in the world commercial market medicinal plants and drugs facilities of the vegetable origin. The European countries not tarred roofing paper-to import, but also in big variety produce the medicinal plants and medicinal facilities of the vegetable origin. Europeans to consumers, in France for instance, Germany, Italy, Sweden, Switzerland and in United Kingdom quite often use the medicinal facilities of the vegetable origin to treatment usual medicinal facility as an added feature.

In New independent state and in country of Central and Earth Europe to consumers are also valued medicinal facilities plants of the origin, but on other reason. The hard economic situation quite often limits the access to available rather expensive usual medicinal facility with the result that they strive to less before-horn alternative medicine, for instance vegetable origin.

Polysaccharides be included in walls of the vegetable hutches and are an essential component of the food animal and person. At present for many polysaccharides of the plants is revealed multiform physiology action:

immunomodulating, antitumors, gastoprotective, antihypoxic and antitoxic

In earlier called on by us experimental study noted that amount polysaccharides, chosen from herb of *Bidens tripartitae*, rendered stimulating activity influence upon humoral immune answer and on function lymphatic organ beside control and with immunodeficiency animal. On its efficiency she did not yield the vegetable immunostimulate drug Immunol'. On base of the substances of polysaccharides, chosen from herb of *Bidens tripartitae* is designed tablet under moustache by name - "Immunokor".

Purpose of the study. To study of the influence of the preparation "Immunokor" on immunological reactivity and hematological factors by acute toxic hepatitis.

MATERIAL AND METHODS. In experiment are used white non-kinds mouse both flap by mass 18-22 g with acute toxic hepatitis (ATG) beside mouses caused with on-power hepatotropic poison - carbon tetrachloride (CCl₄), which entered daily sub dermal in area hip during 3-d days in the manner of 20 % oil solution on 0,2 ml. At day of the last introduction CCl₄ mouses intraperitoneal immunized the erythrocytes of the sheep (ES) in dose 5x10.^[6]

The animals were divided into 7 groups on 10 goals. 1-st group - a control: intact mouse, immunized by ES + distilled water; 2-d group - a mouse with ATG got ES; 3-d group - a mouse with ATG got ES + in received 4-h days intrastomac entered the substance of polysaccharides, chosen from herb of *Bidens tripartitae*

(the local raw material) in dose 7,0 mg/kg; 4-st group - a mouse with ATG got ES + during 4-h days intrastomac entered the tablet "Immunokor" (designed on base of the substances have polysaccharides of *Bidens tripartitae*) in dose 7,0 mg/kg; 5-s group - a mouse with ATG got ES + during 4-h days substance polysaccharides in dose 14,0 mg/kg; 6-s group - a mouse with ATG got ES + during 4-h days tablet "Immunokor" in dose 14,0 mg/kg; 7-s group - a mouse with ATG got ES + during 4-h days intrastomac_ entered the preparation of the comparison immunal in dose 7,0 mg/kg.

On 5-s day after immunization ES mouses were killed and defined number antibodyproducing cells (ABC) in spleen. The number of ABC calculated on the whole organ (the absolute factor) and on 10^6 cells of spleen (relative factor). In peripheral blood immunized mouses quantified numbers erythrocytes and leucocytes.

The got results to statistical processing, using package of the applied programs of the statistical analysis Excel-2003 with calculate; midlearithmic (M), average square-law deflection, standard error (m), relative values (the frequency, %), criterion of Student (t) with calculation of probability of the error (p). The differences average likenesses considered reliable at level of value $p < 0,05$. Herewith the existing instructions kept statistical data processing clinical and laboratory studies.

RESULTS AND DISCUSSION

The results of the studies on study of the influence of the different doses substance purpose polysaccharides and tablets "Immunokor" on number ABC in spleen and

number nucleocontaining cells in spleen (NCC) beside mouses with ATG are presented in table 1. In checking beside normal animal is formed $8340,0 \pm 426,9$ ABC at calculation on the whole spleen, but under ATG number ABC on spleen realistically falls in 1,67 times ($4990,0 \pm 349,1$). In group of the mouses with ATG, got substance polysaccharides and tablets "Immunokor" in dose 7,0 mg/kg number ABC on spleen realistically increases in 1,30 times ($6500,0 \pm 262,0$) and 1,28 times ($6400,0 \pm 443,0$) by comparison in contrast with immunodeficiency group. These facility in dose 14,0 mg/kg realistically in 1,55 times ($7730,0 \pm 246,3$ ABC) and 1,44 times ($7200,0 \pm 487,2$ ABC) accordingly raise the immune answer to ES. The Preparation having shifted-threads immunal, either as substance of polysaccharides in dose 7,0 mg/kg, raises the number ABC on spleen in 1,49 times ($7450,0 \pm 408,6$).

Beside mouses with ATG at calculation ABC on 1 mln. splenocytes are installed that in checking group he is $47,7 \pm 2,8$, but beside mouses with pathology liver given factor does not change ($47,5 \pm 2,2$). In group of the mouses with ATG, the received substance of polysaccharides and tablet "Immunokor" in dose 7,0 mg/kg, number ABC on 1 mln. cells of the spleen in contrast with not treated by group unauthentic increases in 1,15 accordingly and 1,24 times. These facility in dose 14,0 mg/kg raise the number ABC on 1 mln. cells of the spleen in 1,19 times ($p < 0,05$) and 1,17 times ($p < 0,05$). Referens-preparation immunal does not influence upon number ABC in calculation on 1 mln. cells of the spleen ($51,8 \pm 1,7$).

Table 1. Influence to substances polysaccharides and tablets "Immunokor" on immune answer to erythrocytes of the sheep beside mouses with ATG ($M \pm m$, $n=10$)

Group	Doses, mg/kg	Number NCC $\times 10^6$	IC	Parameters ABS			
				Spleen	IC	10^6 cells of spleen	IC
1. control	-	$176,0 \pm 3,6$	-	$8340,0 \pm 426,9$	-	$47,7 \pm 2,8$	-
2. ATG	-	$105,1 \pm 4,9^*$	-1,67	$4990,0 \pm 349,1^*$	-1,67	$47,5 \pm 2,2$	-1,0
3. ATG+ Substance of polysaccharides	7,0	$120,9 \pm 5,6^{***}$	+1,15	$6500,0 \pm 262,0^{***}$	+1,30	$54,5 \pm 2,7$	+1,15
4. ATG+tablet «Immunokor»	7,0	$112,1 \pm 5,2^*$	+1,07	$6400,0 \pm 443,0^{***}$	+1,28	$58,8 \pm 5,7$	+1,24
5. ATG+Substance of polysaccharides	14,0	$135,5 \pm 4,3^{***}$	+1,29	$7730,0 \pm 246,3^{**}$	+1,55	$57,5 \pm 2,3^{***}$	+1,19
6. ATG+tablet «Immunokor».	14,0	$128,5 \pm 4,4^{***}$	+1,22	$7200 \pm 487,2^{**}$	+1,44	$56,7 \pm 4,4$	+1,17
7. ATG+ immunal	7,0	$143,6 \pm 5,7^{***}$	+1,37	$7450,0 \pm 408,6^{**}$	+1,49	$51,8 \pm 1,7$	+1,07

The note: ABC – antibodyproducing cells, NCC – nucleocontaining cells of the spleen, IC - an index of the correlation, (-) - to 1 gr., (+) - to 2 gr., * - realistically to 1 gr. ($p < 0,05$), ** - realistically to 2 gr ($p < 0,05$).

Thereby, beside mouses with ATG number ABC at calculation, both on the whole spleen, and on 1 mln. splenocytes increases when entering the substances of polysaccharides and tablets "Immunokor" in dose 7,0 and 14,0 mg/kg.

As can be seen from table 1 total number NCC in checking is $176,0 \pm 3,6$ 106, but beside mouses with ATG their level realistically falls in 1,67 times ($105,1 \pm 4,9$ 106). Beside mouses with ATG, got substance of polysaccharides in dose 7,0 mg/kg, number NCC in contrast with previous group realistically

increased in 1,15 times, but beside animal, got tablets "Immunokor" in dose 7,0 mg/kg, number NCC does not change. These facility in dose 14,0 mg/kg significantly in 1,29 and 1,22 times accordingly raise the level NCC on having shifted-thread with not treated animal with pathology of liver. Immunal in 1,37 times raises the number NCC beside mouses with ATG.

Hereinafter it were studied effect to substances of polysaccharides and tablets "Immunokor" on number of erythrocytes and leukocytes in peripheral blood mouses with ATG (table 2). In checking number of erythrocytes is $8,3 \pm 0,2 \times 10^9/\text{ml}$, but beside mouses with ATG their level realistically falls in 1,12 times ($7,5 \pm 0,1 \times 10^9/\text{ml}$). In animal group with ATG, got substance of polysaccharides in dose 7,0 mg/kg level of erythrocytes realistically increases in 1,14 times, but beside mouses, received tablets "Immunokor" in dose 7,0 mg/kg level of

erythrocytes not from is changed. Under influence of the substances of polysaccharides and tablets "Immunokor" in dose 14,0 mg/kg number of erythrocytes realistically raises wreath in 1,18 and 1,16 times. Immunal in 1,41 times raises the number of erythrocytes beside mouses with ATG/.

In checking group number leukocytes is $3,9 \pm 0,1 \times 10^6/\text{ml}$, but under ATG their level realistically falls in 1,15 times ($3,4 \pm 0,1 \times 10^6/\text{ml}$). Substances of polysaccharides and tablets "Immunokor" in dose 7,0 mg/kg are realistically in 1,18 and 1,21 times accordingly raise the amount of leukocytes on having blood -thread with not treated animals. These facility in dose 14,0 mg/kg .increase tricks the number a leukocytes in 1,26 and 1,24 times accordingly beside mouses with ATG. Immunal raises the number of leukocytes in 1,24 times.

Table 2. Influence to substances of polysaccharides and tablets "Immunokor" on amount erythrocytes and leukocytes in blood beside mouses with ATG ($M \pm m$, $n=10$)

Group	Doses, mg/kg	Erythrocytes $\times 10^9/\text{ml}$	IC	Leukocytes. $\times 10^6/\text{ml}$	IC
1. control	-	$8,3 \pm 0,2$	-	$3,9 \pm 0,1$	-
2. ATG	-	$7,5 \pm 0,1^*$	-1,12	$3,4 \pm 0,1^*$	-1,15
3. ATG+Substance of polysaccharides	7,0	$8,4 \pm 0,2^{**}$	+1,14	$4,0 \pm 0,2^{**}$	+1,18
4. ATG+ tablet «Immunokor»	7,0	$7,9 \pm 0,2$	+1,07	$4,1 \pm 0,2^{**}$	+1,21
5. ATG+Substance of polysaccharides	14,0	$8,7 \pm 0,2^{**}$	+1,18	$4,3 \pm 0,1^{***}$	+1,26
6. ATG+ tablet «Immunokor».	14,0	$8,6 \pm 0,1^{**}$	+1,16	$4,2 \pm 0,1^{***}$	+1,24
7. ATG+ immunal	7,0	$10,4 \pm 0,2^{***}$	+1,41	$4,2 \pm 0,1^{***}$	+1,24

The note: IC - an index of the correlation, (-) - to 1 gr., (+) - to 2 gr., * - realistically to 1 gr. ($p < 0,05$), ** - realistically to 2 gr. ($p < 0,05$).

Consequently, substance of polysaccharides and tablets "Immunokor" in studied dose are raise the amount an erythrocytes and leukocyte in peripheral blood of mouses with ATG.

CONCLUSIONS

1. Substance of polysaccharides and tablets "Immunokor" are in 1,28-1,55 times raise the total number ABC in spleen of the mouses with ATG.

2. Substance of polysaccharides and tablets "Immunokor" are realistically increase the number an erythrocytes in 1,14-1,18 times, but number of leukocytes raise in 1,18-1,26 times in peripheral blood mouses with ATG.

REFERENCE

1. The Monographs carry about medicinal plants, broadly used in New independent state (NIS). The Worldwide organization of public health. - France. - 2010; 453 p.
2. The Gadfly YU.S. Polysaccharides flowering plants: structure and physiology activity. // Bioorgan. chemistry. - 1998; 24(7): 483-501.

3. Suyarov A.A., Alimova M.T., Kireev V.V., Japarov R.K. The Comparative estimation immunostimulated actions fractions of polysaccharides chosen from extract *Bidens tripartita*, and immunal in experiment. // Physiology and pathology immune systems. Immunopharmacogenomica. - Moscow. - 2013; 17(12): 15-20.
4. Suyarov A.A., Alimova M.T., Japarov O.K. The Comparative estimation immunostimulate actions of the amount polysaccharides chosen from extract *Bidens tripartita* and immunal under experimental immunodephicite condition. // Mat. IV Inten. Scientific conf. "Modern society: problems, ideas, innovations" - 2015; 15-19.
5. Suyarov A.A., Japarov A.K., Alimova M.T., Kireev V.V. The Study of the action on lymphoid organs and immunological to factors of the amount polysaccharides of *Bidens tripartita* in contrast with immunal in experiment. // Physiology and pathology immune systems. Immunofarmacogenomik. - Moscow. - 2015; 19(11): 28-31.

6. Gunter E.A., Ovodov Yu.S. Changes in cell wall polysaccharides of *Silene vulgaris* callus during culture. // *Phytochemistry*. 2002; 59: 703–708.
7. Shin K.S., Kiyohara H., Matsumoto T., Yamada H. Rhamnogalacturonan II from leaves of *Panax ginseng* C.A.Meyer as a macrophage Fc receptor expression enhancing polysaccharide. // *Carbohydr. Res.* 1997; 300: 239–249.