Erbisol for treating patients with viral hepatitis B: an experience

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Examined were 30 patients with the severe and moderate forms of viral hepatitis B (VHB), who were administered with 2 ml Erbisol (a new Ukrainian medicinal product) daily for 20-25 days against the background of combined therapy. Results were compared to those obtained in 25 patients of control group, who were on combined therapy only. The results obtained revealed that Erbisol is a valuable drug for treating acute VHB. It produces a hepatoprotecting effect resulting in a speedy regression of clinical manifestations of VHB symptoms, restoration of liver function, positive effect relative to "medium-sized molecules" by binding capacities of albumin and alkaline phosphatase as indices of intoxication and detoxication processes. A 3- to 4-week therapy with Erbisol significantly reduced duration of antigenemia.

The problem of viral hepatitis remains one of the actual problem taking into account a significant prevalence of this infection and its serious consequences at present as well as in previous years. In connection with the identification of the more and more new viruses causing parenchimatous disease of the liver this problem assumes the more greater importance now. By this time 7 viral hepatitis such as A, B, C,D, E,G and F were clearly identified. Everyone of these viruses causes an original clinical picture of hepatitis. The treatment of such different hepatitis is a difficult task as before. A necessity for the search of a new therapeutical approaches is dependent on lack of the safe etiotropic agents and discrepant data of antiviral and immunocorrecting agents.

Erbisol drug, developed by A.N.Nikolayenko and manufactured by Scientific Production Center "ERBIS" situated in Kiev, was approbated in the Clinic of Viral Hepatitis at Kiev Scientific Research Institute for Epidemiology and Infectious Diseases beginning from 1994 [1].

Erbisol represents a natural protein-free complex of organic compounds with low molecular weight of non hormonal origin extracted from animal embryonic tissues. Its harmless, immunomodulating and regenerative effects, an influence on the processes of lipid peroxidation, an activity of glutathione-dependent blood system were revealed at the experimental stage. Erbisol use in clinical practice under different pathological processes revealed the mobilization of internal reserves in whole body and first of all in the immune system taking part in the control of homeostasis [2-7]. Erbisol affects only the diseased body and has not comulative properties, does not induce the allergic responses, the toxic, embryotoxic and cancerogenic effects. It induces the synthesis of interferon and factor of tumor necrosis, potentiates the effects of antibiotics and at the same time decreases their toxic side effect.

The therapeutic efficiency of Erbisol was studied by us in acute hepatitis B. The materials connected with Erbisol treatment of acute VHB are listed in the present article.

55 patients with VHB were under our observation: there were 24 men and 31 women. The age of patients was between 18 and 46 years. Diagnosis of all the

patients was confirmed by the isolation of HB5 – antigen. 30 patients were received Erbisol (a main group) among observed patients. Patients of main group were divided in accordance with severity of VHB as follows: 16 patients have the severe form of disease, 14 – the moderate form of disease.

Data obtained were compared with the results of treatment in control group that according to sex, age and severity of disease were similar to those of patients in the main group. Among patients of control group the severe form of hepatitis was observed in 13 patients and moderate – in 12 patients.

Both groups were also comparable according to the initial indices of the main biochemical analyses such as bilirubinemia, alanineaminotranspharase activity, indices of thymol test (Table 1).

Table 1.

Comparison of biochemical indices in comparative groups of patients with viral hepatitis B before treatment

Biochemical indices before treatment	Erbisol group	Control group
	Severe form Moderate form	Severe form Moderate form
Total bilirubin, mkmol/l	271,2 + 14,3 134,6 ± 7,6	264,8 + 11,6 136,6 ± 6,2
Direct bilirubin, mkmol/l	198,2 + 13,2 90,8 ± 7,2	172,7 + 10,8 97,1 ± 0,9
AlAt activity, in whole blood serum, mkmol /h.l	13,0 + 0,9 12,2 ± 0,9	14,0 + 1,4 12,3 ± 0,9
AlAt activity, in diluted blood serum, mkmol /h.l	25,2 + 2,1 21,2 ± 2,3	25,2 + 2,3 22,7 ± 2,4
Indices of timol test, units, SH	12,4 + 1,2 12,2 ± 0,8	12,8 + 0,8 11,0 ± 1,1

The duration of intoxication and icteric period, terms of biliary crisis approach, duration of hospital stay and persistence of HBs-antigen, dynamics of biochemical data (content of total bilirubin and its fractions in blood serum, indices of alanineaminotranspherase (AlAt) activity in whole and diluted (with physiological solution 1:10) blood serum, activity of alkaline phosphatase, indices of albumin binding capacity, content of "medium-sized molecules" in blood serum and urine) were as clinical indices of drug efficiency.

Erbisol was administered in a dose of 2 ml as a daily intramuscular injection on 3-8 days of icteric period till a patient discharge from hospital (at a average 24,7 days). Clinical efficacy of Erbisol is shown in Table 2.

Table 2

Indices of clinical efficiency of Erbisol in patients with viral hepatitis "B"

Groups of patients	Indices of clinical efficiency (days)				
	Duration of intoxication	Terms of biliary crisis approach	Duration of icteric period	Duration of HBs-antigenemia	Duration of hospital treatment
1-st n = 16	5,4 ± 0,8	5,6 ± 0,9	20,6 ± 1,5	24,2 ± 1,9	26,2 ± 1,7
2-nd n = 13	14,7 ± 1,1	9,9 ± 1,5	24,7 ± 1,9	27,0 ± 2,2	35,2 ± 2,0
Shortening of terms (days)	9,3	4,3	4,1	2,8	9,0
3-rd n = 14	4,3 ± 0,7	4,5 ± 0,8	13,4 ± 1,1	14,0 ± 0,7	25,3 ± 1,8
4-th n = 12	10,2 ± 0,2	10,5 ± 0,5	15,9 ± 1,4	21,6 ± 1,7	29,1 ± 2,0
Shortening of terms (days)	5,9	6,0	2,5	7,6	3,8

Note: 1-st group – patients with severe form of VHB, treated by Erbisol;
2- nd group – patients with severe form (control);
3-rd group – patients with moderate form of VHB, treated by Erbisol;
4- th group – patients with moderate form (control).

In comparison with control group the regression of clinical symptoms of disease including more quick detoxication effect, decrease in the duration of icteric period and hospital treatment was revealed during Erbisol use in combined therapy of viral hepatitis B as shown data of the Table 2. So in the severe form of hepatitis a disappearance of intoxication features was noted 9 days early, the terms of beginning of biliary crisis, a decrease in the duration of icteric period were shortened in 4,3-4,1 days and patients discharge from hospital was realised 9 days early; and according to these criteria in the moderate form of severe hepatitis - 5,9-6,0 – 2,5-3,8 days early, respectively, comparing to control group.

A negative clinical effect of Erbisol treatment was found in a patient with the severe form of VHB. An increase in biliousness, aggravation of intoxication syndrome, an increase in bilirubin content of blood serum that required an additional administration of corticosteroid therapy were revealed in this patient. A cause of disease exacerbation was superinfection of hepatitis B after hepatitis A. No effect of basic therapy was manifested in 6 patients of control group that provoked the necessity for prednisolon and laferon insertion into complex of agents.

In patients with Erbisol treatment the duration of antigenemia consisted of 14,0±0,7 days in the moderate form, 24,2±1,9 days in severe form, and 21,6 ±1,7 and 27,0±2,2 days in control group, respectively. There is necessary to note that 8 from 25 patients of control group were discharged from hospital with positive HBs-antigenemia. A persistence of HB-antigen remained in 3 patients after discharge from hospital among patients of main group.

Side by side with clinical observations in those patients the drug efficiency was evaluated by the results of biochemical analyses used as a rule in clinical practice during the investigation of patients with viral hepatitis (concentration of total and direct bilirubin, indices of thymol test) as well as by the special indices, reflecting separate symptoms of disease such as cytolysis (AlAt activity of whole and diluted blood serum), cholestasis (activity of alkaline phosphatase - AlkPh), intoxic index (concentration of "medium-sized molecules"-MM),and also one of significant indices of the state in detoxication processes in the body (albumin binding capacity - ABC). The investigations were carried out in dynamics before and after finishing treatment.

The more pronounced "positive" changes in the biochemical indices were noted in the main group of patients treated with Erbisol comparing to control group. So blood bilirubin was decreased up to normal values in 40% patients of main group and 24% patients of control group in the severe form of hepatitis after treatment and in 54,2 % and 37,5% patients of main and control groups in the moderate form of hepatitis respectively. Insignificant hyperbilirubinemia has been maintained in other patients within the limits of 30-35 mkmol/l – main group in 60,1% and 45,8% according to severity of hepatitis and control group - in 76,0% and 62,5% respectively. The AlAt activity was normalized in 55,0% and 65,4% patients of main group and in 40,0% and 25% patients of control group too. In other patients (45,0% and 34,6%) of main group the AlAt activity remained minimal between 1,4 and 1,2 mkmol/h.l. while in 60% and 75% patients of control group the AlAt activity has been determined within the limits of 3,6-2,4 mkmol/h.l (Table 3).

Table 3

Comparison of biochemical indices in comparative groups of patients with viral hepatitis B after treatment

Biochemical indices after treatment	Erbisol group Severe form Moderate form	Control group Severe form Moderate form
Incidence of hyperbilirubinemia, %, total bilirubin, 30-35 mkmol/l	60,1 45,8	76,0 62,5
Incidence in patients with increased AlAt activity, %,	45,0 34,6	60,0 75,0
Index of AlAt activity, mkmol/h.l	1,4 + 0,2 1,2 ± 0,2	3,6 + 0,6 2,4 ± 1,7
Mean indices of timol test,	5,9 + 0,7	5,6 + 0,8

units. SH	4,4 ± 0,7	4,3 ± 0,6

A positive effect of Erbisol usage was determined in accordance with the biochemical indices (Table 4), that were characterized by intoxic and cholestatic syndromes and detoxic function of albumin. So, in patients with the severe and moderate forms of disease, 24,5% and 20,5% decrease in the blood MM concentration was noted in 2 weeks of Erbisol treatment and 34% and 36,2% decrease - by the end of treatment, respectively. In this group 42,6% and 50% increase of urinary, excretion of MM was revealed in 2 weeks and 53,4% and 45,0% - at discharge from hospital. At the same time these indices in blood were 11,5% and 13,0% in patients of control group 2 weeks later and at average 31% and 20% at discharge from hospital and some of them were even increased in 10% and 13% testifying the more accumulation of MM in the body.

Table 4

Comparison of biochemical indices in comparative groups of patients with viral hepatitis B in process of treatment and after treatment

Biochemical indices after treatment	Erbisol group		Control group	
	Severe form Moderate form		Severe form Moderate form	
	In 2 weeks	At discharge	In 2 weeks	At discharge
Decrease of "medium-sized molecules"concentration in blood in %	24,5 20,5	34,0 36,0	11,5 13,0	31,0 20,0
Increased urine excretion of "medium-sized molecules" in %	42,6 50,0	53,4 45,0	32,0 34,0	29,0 34,5
Increased indices of ABC in patients in %	21,0 33,0	59,0 43,0	20,0 21,0	28,0 27,0
Decrease in alkaline phosphatase activity in %	21,3 42,2	67,8 47,0	25,0 23,5	23,3 23,8

Note: All examined patients began to use the drug on first 8 days after jaundice manifestation.

The indices of ABC were significantly increased in patients with VHB treated by Erbisol after finishing treatment in comparison with control group: in the severe form of disease was more than 2 time their increase and in the moderate form – 1,5 time increase making 59% and 28% in main and comparative groups in the severe form; 43% and 27% - in the moderate form of disease respectively. In the main group the AlkPh activity was more decreased in patients with the severe form of VHB that was 67,8% and 23,3% in comparison with control group and 47% and 23,8%, in patients with the moderate form of VHB respectively.

The indices characterized cytolytic syndrome, activity of AlAt and also blood bilirubin concentration were markedly decreased during the first week of

Erbisol administration in patients with the severe as well as moderate forms of hepatitis; at the discharge from a hospital these indices were similar to those of control group.

The drug is well tolerated in patients, no the side effects were revealed in the process of treatment.

Thus the conducted observations allow to come to the conclusion that Erbisol is valuable therapeutic agent for the treatment of acute viral hepatitis B. It exerts the positive hepatoprotecting effect confirmed by the quick regression of clinical symptoms of disease, the restoration of functional state of the liver, the positive effect relative to "medium-sized molecules", albumin-binding capacity, alkaline phosphatase as the indices of toxication and detoxication processes. A 3- to 4-week therapy with Erbisol significantly reduced the duration of antigenemia.

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