

INFLUENCE OF LAGOVIN PREPARATION ON VASCULAR-PLATELET HEMOSTASIS COMPARING WITH DICINON

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It is known that the mechanism of hemostatic action of Dicinon preparation is based on decreasing in endothelium of prostacycline and then thrombocytes aggregation. Dicinon stimulates formation of new thrompocytes from megacariocytes and their outletfrom depot, stimulates increasing of speed of formation primary thromb at the site of damage and intensification of its retraction, i.e. influence on vascular-platelet hemostasis.

Mechanism of Lagovin and Dicinon effects depends on their influence on vascular-platelet hemostasis amount, adhesion and aggregation of thrombocytes. Lagovinhas the better therapeutic effect than Dicinon. And Lagovin dose is 60 times more and 5,5 times less than Dicinon. Lagovin preparation is characterized by its high therapeutic effect.

Objective of research. In this regard the objective of this work was: to study the influence of new domestic hemostatic for intravenous injection Lagovin on vascular-platelet hemostasis comparing with Dicinon. The objective of research included the study of Lagovin effect on vascular-platelet hemostasis comparing with Dicinon: 1.Plateletadhesion and aggregation; 2.Thromb retraction; 3.On time of bleeding and hemorrhage amount .

Method of research. The research was conducted in grey rabbits with mass of 3-3.5 kg, white pedigreeless mice with mass of 140 ± 10 g and mice with mass of 19 ± 1 g. About the influence of preparation on vascular-platelet hemostasis was judged according to the change of amount, adhesion and platelet aggregation in peripheral blood, thromb retraction, hematocrit, bleeding time and capillaries resistance. [1]. Sampling of blood in rabbits was made after 30, 60, 120, 180 and 240 minutes from the beginning of injection the preparation. The obtained data were tested statistically [2].

Results. To assess vasoconstructive activity of arterioles, venules and capillars function the number of research was conducted. Research was carried out on capillary resistance under the effect of Lagovin, the results of those showed that in 30 minutes after intra-abdominal injection Lagovin in a dose of 0.5 mg/kg increased the time of coloring of mice skin from 4.5 ± 0.25 to 7.33 ± 0.28 minutes, i.e. increased the resistance of capillaries to 63%. Dicinon in a dose of 30 mg/kg (60 times more than Lagovin dose) at intra-abdominal injection at the same period increased the time of coloring of mice skin up to 5.9 ± 0.3 minutes (by 31%), i.e. 2 times less. The

next experiments were conducted in mice in which at intra-abdominal injection of preparations in comparative aspect the time of bleeding and hemorrhage amount were studied. This test reflects vascular-platelet mechanism of hemostasis and is determined by the amount and platelet condition (their ability to adhesion and aggregation). Time of blood coagulation in 30 minutes after Lagovin injection in doses of 0.5; 1.0; 2.0 and 5 mg/kg reduced from 375 ± 25 sec. to 83 ± 6.6 ; 103 ± 6.2 ; 87 ± 6.4 and 123 ± 10.8 sec respectively, i.e. by 3-4.5 times. The same picture we observed when studied hemorrhage amount: so, in control this indicator was 367 ± 24 mg, and in doses of 0.5; 1.0; 2.0 and 5 mg/kg respectively the indicators of hemorrhage were equal to 62 ± 7 mg, 123 ± 4 mg, 67 ± 4 mg and 133 ± 10 mg. Influence of Lagovin on thrombocytes number and their functional activity was studied in rabbits to which Lagovin was injected intravenously in doses of 0.5; 1 and 2 mg/kg. Maximal increase of adhesion (control $21\pm 1.6\%$) we observed in dose of 0.5 mg/kg – after 30 minutes up to $52\pm 2.0\%$, in a dose of 1.0 after 60 minutes up to $61\pm 4.5\%$ and in dose of 2 mg/kg after 120 minutes up to $53\pm 2.4\%$. i.e. by 2.7-3.0 times comparing with the initial. Maximal increase of thrombocytes adhesion upon the effect of Dicinon was to 120 minute and increased up to $53\pm 2.4\%$ by 2.5 times. Upon the action of Lagovin maximal increase of spontaneous platelet aggregation begins after 30-120 minutes respectively for doses of 0.5; 1.0 and 2.0 mg/kg from $21\pm 1.4\%$ to $46\pm 2.4\%$, $57\pm 3.4\%$ and $50\pm 3.4\%$, i.e. by 2-3 times. Upon the action of Dicinon maximal increase of spontaneous platelet aggregation was observed after 60 from $33\pm 3\%$ to $70\pm 6\%$, i.e. spontaneous aggregation increased by 2.1 times. Dynamics of changing hematocrit at injection of the both preparations testifies to unreliable increase of this indicator after 30 minutes with further decreasing which is connected with hemorrhage.

Thus, mechanism of hemostatic action of Lagivin preparation on blood coagulation process, as Dicinon is related to its influence on vascular-platelet hemostasis.

Conclusion

1. It was ascertained that the mechanism of Lagovin action is related to its influence on vascular-platelet hemostasis that is showed in reducing time of bleeding and hemorrhage amount by 1.5-2 times, increasing platelet amount by 35-57%, increasing adhesion and aggregate activity and intensification of retractive properties of blood.

2. It was shown that Lagovin overcomes Dicinon not only according to effectiveness but time of maximal effect and range of therapeutic action. At the same time therapeutic index for Dicinon is equal to 44, and for Lagovin 14400.

References

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