EFFECT OF THE M-10 DRUG ON ARTERIAL PRESSURE IN WHITE RATS

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Current relevance: Today, cardiovascular diseases are one of the most pressing problems in the global healthcare system and are one of the leading causes of death worldwide. According to the World Health Organization, more than 17 million people die annually from cardiovascular diseases. Therefore, the search for new biologically active substances and the assessment of their impact on the cardiovascular system are of great scientific and practical importance.

Purpose of the study: The aim of the research is to determine the vasorelaxant effect of biologically active substances on white rats in vivo and to scientifically characterize the mechanisms of their action based on physiological and biochemical indicators. To achieve this goal, the role of biologically active substances in the regulation of vascular tone, their pharmacological significance, and the possibilities of their potential clinical use are determined.

Methods and techniques: The study was conducted on healthy white rats. For the experiment, male laboratory rats weighing 180-220 g were selected. The animals were kept under standard conditions, at a temperature of 24-26°C, in a 12-hour lighting regime. The drug M-10 was administered to each rat at a dose of 100 mg/kg via the caudal artery. The Acqknowledge Systole system was used to monitor blood pressure indicators. The results were recorded in real time.

Results: According to the results of observation after the administration of the drug, the indicators of arterial pressure changed over time. After 1 hour, systolic pressure (SBP) increased slightly from 117.5 mmHg to 122.0 mmHg, while diastolic pressure (DBP) decreased from 96.0 mmHg to 92.0 mmHg. In the 2nd hour, SBP sharply decreased to 92.0 mmHg. The lowest indicator was recorded at 3 hours, where SBP/DBP was 73.5/52.0 mmHg. By the 4th hour, the pressure relatively recovered and was around 98.0/67.5 mmHg.

As can be seen from the obtained results, the drug M-10 has a two-phase effect on arterial pressure. Initially, a short-term hypertonic effect was observed, followed by a significant decrease in blood pressure. This indicates the vasorelaxant properties of the drug. The obtained data are consistent with the mechanisms of action of some biologically active substances in the available literature. Therefore, M-10 is worthy of further study as an antihypertensive agent.

Conclusions:

1. The drug M-10 initially slightly increases blood pressure, and then significantly decreases it.
2. The vasorelaxant properties of the drug indicate the prospects for its use as an antihypertensive agent.
3. In the future, it is necessary to study the mechanisms of action of the drug more deeply.