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Study Of the Effect Of A Mixture Of Medicinal Plants Water Pepper (Polygonum Hydropiper), Yarrow (Achillea Filipendulina), And Chamomile (Matricaria Chamomilla) On The Functioning Of The Cardiovascular System

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Abstract

The new collection of medicinal plants, including Water Pepper, Tuberculosis, and Medicinal Chamomile, is recommended for medical use as an anti-inflammatory, diuretic, blood clotting enhancer, metabolism enhancer, blood formation enhancer, blood sugar reducer, and other diseases. The effect of tinctures of medicinal plants in different proportions on the amount of erythrocytes in the blood was studied by the screening method. Tincture No. 1: Water pepper, St. John's wort and Medicinal chamomile - selected in a ratio of 1:1:1:1:1. This tincture had a strong effect on the amount of erythrocytes in the blood.

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1. Introduction

In subsequent experiments, the toxicological and pharmacological properties of the medicinal plants prepared from the dry extracts of these plants (1:1:1:1:1 ratio) were studied.

Its effects on arterial blood pressure and respiratory function were studied in 7 cats and 12 rabbits using an acute experimental method. Arterial blood pressure was recorded throughout the experiment using a mercury manometer using polyethylene tubes connected to the carotid artery in the neck of the animals and using a polygraph apparatus. Simultaneously with blood pressure, respiratory movements were also recorded using a capsule Maria connected to the trachea of the animals. The infusion was administered to the experimental animals in doses of 5, 10 and 25 mg/kg through special catheters previously inserted into the stomach through the esophagus.

In the next experiments, the effect of medicinal plants on autonomic nerve innervation was studied. Experiments were performed on 5 cats weighing 2.7-3.5 kg, 7 rabbits weighing 2.4-3.2 kg, 10 laboratory rats and 7 guinea pigs, anesthetized with ethaminal sodium (1%) solution.

The effect of the studied infusion on the peripheral cholinergic system was assessed by the change in the depressant reactions in arterial blood pressure, which were revealed by intravenous administration of acetylcholine solution in doses of 0.5-1 μg/kg. The effect of the drug on the peripheral adrenergic system was assessed by the change in the hypertensive reactions in arterial blood pressure, which were revealed by intravenous

administration of 0.01% adrenaline hydrochloride solution in doses of 5 and 10 μg/kg before and after the infusion. Under the same conditions, the effect of the infusion on the histaminergic system of the body was studied using a 0.01% histamine solution (0.5-1 μg/kg).

The effect of the studied medicinal plants on the bioelectric activity of the heart was studied in 3 cats weighing 2.8 - 3.2 kg and 18 rats weighing 156-182 g. and 7 rabbits weighing 2.6-3.1 kg. The tincture was administered orally through a special probe at doses of 5-15 mg/kg and 25-50 mg/kg. The electrocardiogram (ECG) of the heart was recorded using a single-channel EKSPCH-4 electrocardiograph of the II standard.

The effect of the studied collection on arterial blood pressure and respiration was studied in previously anesthetized rabbits. The studied plant collection was administered to the experimental animals orally through a special catheter at doses of 5, 10, 25, and 50 mg/kg.

The experiments conducted show that the new hypotensive collection in relatively small doses (5-10 mg/kg) has almost no effect on arterial blood pressure and respiratory rate. In some experiments, 25-35 minutes after administration of the studied collection, it significantly lowers blood pressure, and the hypotension lasts for 30-45 minutes. This effect of this medicinal collection depends on the initial arterial blood pressure of laboratory animals, and the higher the blood pressure of the animals, the better the hypotensive effect of the studied plant collection on blood pressure is manifested. The decrease in blood pressure has almost no effect on respiratory rate and its number.

The above-mentioned conditions are even better when the studied herbal combination is used in high doses (25-50 mg/kg). Blood pressure drops to 25-40 mg Hg and lasts 40-60 minutes.

The effect of the studied plant extract on the bioelectric activity of the heart was studied separately in cats, rabbits and rats. The experiment was conducted on previously anesthetized animals and their electrocardiogram (ECG) was recorded on a single-channel ECG-I electrocardiograph.

It was found that the hypotensive extract in therapeutic doses (5–15 mg/kg) after a certain period of time significantly reduced the heart rate of the experimental animals (8–14%) and increased the voltage of the R wave by an average of 9–12%. The decrease in the heart rate occurred mainly due to the expansion of the P – Q and Q – T intervals, while the QRS interval remained almost unchanged.

It should also be noted that the analysis of the electrocardiogram obtained when the new medicinal plant collection was administered in doses of catechin deficiency anemia showed that the above-mentioned phenomena were more clearly manifested, but it was noted that the voltage of the P wave remained almost unchanged, and the voltage of the T wave slightly increased in most experiments.

Thus, the studied collection has a positive effect on the heart function of experimental animals. The studied plant collection in therapeutic doses slightly reduces heart rate and increases the voltage of the R waves.

Based on the results of the above experiment, it can be concluded that the hypotensive effect of the extract obtained from the medicinal plants Polygonum hydropiper, Achillea filipendulina, and Matricaria chamomilla does not have a negative effect on the cardiovascular system, but rather significantly increases cardiac activity at the doses studied.

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