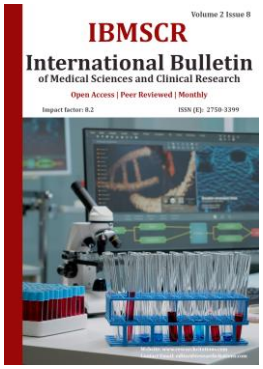

ANTIANEMIC EFFECT OF COLLECTING HERBS IN EXPERIMENTAL POSTHEMORRHAGIC IN RABBITS

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The results of the experiment showed that the infusion of the collection at a dose of 10 ml / kg in posthemorrhagic anemia has an antianemic property and in such effect it is not inferior to the drug ferask. The infusion of the collection contributed to the restoration of the morphological composition of peripheral blood and the content of free iron in the blood serum.

Keywords: pepper highlander, bird highlander, pharmacy chamomile, common yarrow, naked licorice, ferask, number of red blood cells.

Die Ergebnisse des Experiments zeigten, dass die Infusion der Sammlung in einer Dosis von 10 ml / kg bei posthämorrhagischer Anämie eine antianämische Eigenschaft hat und in dieser Wirkung dem Medikament Ferask nicht unterlegen ist. Die Infusion der Sammlung trug zur Wiederherstellung der morphologischen Zusammensetzung des peripheren Blutes und des Gehalts an freiem Eisen im Blutserum bei.

Schlüsselwörter: Pfefferhochländer, Vogelhochländer, Apothekenkamille, Schafgarbe, nacktes Süßholz, Feraske, Anzahl der roten Blutkörperchen.

Deneyin sonuçları, posthemorajik anemide koleksiyonun 10 ml / kg'lık bir dozda infüzyonunun antianemik bir özelliğe sahip olduğunu ve bu etkide ferask ilacından daha düşük olmadığını göstermiştir. Koleksiyonun infüzyonu, periferik kanın morfolojik bileşiminin restorasyonuna ve kan serumundaki serbest demir içeriğine katkıda bulunmuştur.

Anahtar Kelimeler: biber yaylası, kuş yaylası, eczane papatyası, civanperçemi, çıplak meyan kökü, ferask, kırmızı kan hücresi sayısı.

The flora of Uzbekistan is rich in medicinal plants, which are widely used in folk medicine (1). Medicinal products from plants, as a rule, are less toxic, do not have side effects. Their use is one of the methods of strengthening human health. They allow you to recover faster after the disease, increase vitality, and also protect you from the adverse effects of the environment (2). Therefore, obtaining and studying herbal medicines for the purpose of their introduction into medical practice is relevant.

Iron deficiency conditions (IDC) in pregnant women is a common clinical and hematological syndrome observed at any gestation period and developing in the body due to iron deficiency. The prevalence of iron deficiency among pregnant women in the developed countries of the world does not exceed 20%, while in developing countries the frequency of IDC can reach 80% (1) IDC is especially common in regions with a high birth rate (Information and search site "Medicinal herbs" / email: homeart.ru ., 2008.).

Among pregnant women in the Republic of Uzbekistan, IDA was detected in 70-90%, while with increasing age of pregnant women, the frequency and severity of anemia increases (A.Kh.Avazov, 2008).

The association of IDA with nutritional disorders in pregnant women, when the diet is unbalanced in basic nutrients (with a deficiency of ascorbic acid, thiamine, riboflavin, vitamin B-6, calcium, iron), has been established.

Anemia is dangerous for a pregnant woman by changing many body functions. The main reason for the development of IDA is poor, inadequate nutrition and blood loss of various nature.With anemia, the balance existing in the body between the intake and excretion of iron is disturbed. The natural source of iron is food. According to Abdurazzok Khozhi Avazov et al. (2008), the daily diet contains an average of 12-15 mg of iron, and the limit of its absorption in the body is 2 mg.

Among the factors predisposing to the development of anemia both outside and during pregnancy, vitamin deficiency, environmental pollution with chemicals, pesticides, high mineralization of drinking water should also be mentioned. In addition, any diseases accompanied by even minor blood loss that disrupt hemoglobin synthesis lead to anemia.

Based on the above, it can be concluded that the prevention and treatment of anemia is one of the urgent problems of modern medicine.

The domestic pharmaceutical market currently has many antianemic drugs. The bulk of these drugs are imported synthetic, expensive and they have various side effects. In our republic there are only a few types of antianemic drugs, such as feramide ferask, kobavit, cyancobalamin. But, unfortunately, currently there are no antianemic drugs of plant origin.

Based on this, the search and pharmacological study of new local anti-anemic agents of plant origin is an extremely urgent task. For this purpose, the Tashkent Pharmaceutical Institute has developed an anti-anemic medicinal plant collection "Phytoferon". It contains several plants in its composition, such as chamomile, pepper mountaineer, yarrow, bird mountaineer and licorice.

The above data indicate the urgency of the problem and the urgent need to find new local antianemic agents of plant origin.

Based on this, the staff of the Tashkent Pharmaceutical Institute has developed a herbal medicinal collection "Pharmacology of a new natural antianemic drug" based on chamomile, yarrow, licorice, bird highlander and pepper highlander. Herbal medicinal collection is authorized by the Pharmacological Committee at the Ministry of Health of the Republic of Uzbekistan for clinical testing as an antianemic agent. This scientific work is devoted to the pharmacological study of the above drug. Medicinal products from plants are one of the methods of strengthening human health. They allow faster recovery of strength after diseases, increase vitality, and also protect against the adverse effects of the environment. Therefore, obtaining and studying medicinal products based on plant raw materials is relevant.

Purpose of the work: This work is devoted to the study of the effect of the collection, in the form of 10% infusion, which includes plants: pepper highlander (Herba Polygoni hydropiperis), bird highlander (Herba Polygoni Avicularis), pharmacy chamomile (Matricaria recutita L.), common yarrow (Achillea millefolium L.) and naked licorice (Glycyrrhiza glfgra L.), on blood morphology in experimental posthemorrhagic anemia (PGA).

Materials and methods. The experiments were carried out on 25 gray, mature rabbits of both sexes, gray color, weighing 2-3 kg. PHA was reproduced by acute bloodletting from the marginal ear vein of rabbits once (3). Two days after the reproduction of PHA, the rabbits were divided into groups of 5 pieces each: 1-group–control, distilled water was obtained in the volume of the therapeutic drug; the 2nd group treated with the infusion of the collection

at a dose of 10 ml / kg and the 3rd group of animals for comparison received the drug ferask at a dose of 25 mg / kg, orally daily, once a day for 30 days. Blood for the study was taken before, 2 days after bloodletting and after 15 and 30 days of treatment. The morphological composition of peripheral blood was studied according to the indicators that most clearly characterize anemia-the hemoglobin level in g/l, the number of red blood cells in x1012, the color index, the hemoglobin content in one red blood cell in PG, the iron content in serum in mmol/l, peripheral blood elements were calculated using diluting fluid in the Goryaev chamber (4). The iron content in the blood serum was determined using a Hostex diagnosticum kit (Italy), by the calorimetric method at the endpoint. The obtained results were processed by the method of variation statistics taking into account the Student's criterion (5).

Results and discussion. The results of the experiment showed that two days after bloodletting, rabbits developed PHA, which was evidenced by changes in the morphological composition of peripheral blood (Table 1). Thus, the hemoglobin level decreased from 135 ±2.5 to 102± 1.3, the number of red blood cells from 5.0± 0.5 to 3.9± 0.8, the color index decreased from 0.81± 0.09 to 0.73±0.02, the hemoglobin content in one erythrocyte decreased from 27±2.5 to 23.75±1.5, the iron content in the blood serum decreased from 18.65±0.05 to 9.65±0.05 mk.mol/l ($P < 0.05$). Anemia was also accompanied by morphological changes in erythrocytes, in particular anisocytosis, poikilocytosis.

Treatment with the infusion of the collection against the background of PHA showed that the most hemostimulating effect was observed after 15 days of experience (Table 1).However, the maximum effect of the drug was observed after 30 days of experience. During this period, under the action of the treated drug, peripheral blood indicators significantly increased than peripheral blood indicators in anemia and approached the baseline data. As can be seen from the table, the hemoglobin level increased from 102±1.3 to 135±1.5 g/l ($P < 0.05$), and the number of red blood cells from 3.9± 0.8 to 5.0±0.5 million.($P < 0.05$) compared with anemia. The color index and the hemoglobin content in one erythrocyte also increased from 0.73 ± 0.02 to 0.81±0.09 and from 23.75 ±1.5 to 27.0±1.5 PG ($P < 0.05$), respectively. During this period, the iron content in the blood serum was increased from 9.65 ± 0.05 to 19.8± 0.2 mmol/l, respectively. Under the influence of the drug ferask during this period, the studied indicators also approached the indicators of the intact group.

The morphological composition of peripheral blood after 30 days of treatment with experimental PHA collection infusion and ferask preparation practically did not differ from the blood parameters of the intact group.

The recovery period in the control group was much slower and the studied indicators did not reach the level of indicators of the intact group even by day 30.

Conclusions.

1. The infusion of the collection at a dose of 10 ml / kg at PHA has an antianemic property.
2. The infusion collection is not inferior to the ferask preparation in terms of such effect.
3. The infusion of syuor contributed to the restoration of the morphological composition of peripheral blood and the content of free iron in the blood serum.

Table 1.

Dynamics of changes in some indicators of peripheral blood of rabbits in experimental PHA treated with collection (M ± m, n=5)

Groups	Hemoglobin, g/l	Red blood cells, x 10^{12}	Color indicator	Hemoglobin content in one erythrocyte, PG	Serum iron content, mmol/l
Intact	135±2,5	5±0,5	0,81±0,09	27 ±2,5	18,65±0,05
Anemia	102±1,3	3,9±0,8	0,73±0,02	23,75 ±1,5	9,65 ±0,05
After the administration of drugs in 15 days					
Infusion of the collection	103±3,0	4,3±0,4*	0,77±0,03 **x	25,2±0,05**x	19,2±0,8**x
Ferask	117±2,0*x	4,5±0,2*	0,87±0,03 **x	29,2±0,8**x	20,4±0,6**x
control	95±3,0	4±0,2	0,71±0,05	23,75±0,05	9,65±0,05
After the administration of drugs in 30 days					
Infusion of the collection	135±1,5**x	5,0±0,5**x	0,81±0,09 **x	27,0±1,5**x	19,8±0,2**x
Ferask	134,6±1,6*x	5,0 ±0,1**x	0,82±0,02 **x	26,9±0,1**x	20,9±0,1**x
control	105±3,5	4,2±0,05*	0,71±0,02	24,2±0,08	14,5±0,5*

Note P*<0.05 in relation to anemia; P*x<0.05 in relation to control

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