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PHYTOCHEMICAL COMPOSITION AND PREPARATION OF MEDICINAL SPECIES BALKHAN WORMWOOD

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Annotation

The widespread use of herbal medicine in gastroenterologists has recently received scientific justification. The study of plants used by local populations in various regions of the Earth is an effective, economical and promising method of searching for substances in the manufacture of new drugs and safe prophylactic agents. All this affects the expansion of the range of medicines produced in Turkmenistan, obtaining new high-quality medicines from local natural raw materials, ensuring their safety, as well as researching and using medicinal plants for medical purposes.

Over the decades, scientists have accumulated enough practice in experiments to create human diseases in experimental animals. The more reliable and effective this practice is, the more likely it will be pathogenetically closer to human diseases, and the more stable the result will be when creating a sample / model of a disease under experimental conditions. One of the most important health problems is the high incidence of chronic inflammatory diseases, and the high risk of complications in the upper digestive system.

Keywords: Balkhan wormwood, macro and microelements of oil extract, tincture, rats, esophageal burn, model of the inflammatory process, model of gastric ulcer.

Study of the chemical composition of the aerial part of the Balkhan wormwood (Artemisa balchanorum Krasch.) And its pharmacological activity, by conducting laboratory experiments on the influence of various diseases developing in the upper part of the digestive system, as well as assessment based on the State Pharmacopoeia and the technology for preparing medicines from various parts of wormwood Balkhanov - endemic to Uzbekistan.

Materials and methods: Balkhan wormwood (Artemisa balchanorum Krasch.) Is an endemic, medicinal and aromatic plant. It grows in natural conditions only in Uzbekistan. Balkhan wormwood is a subshrub of the Asteraceae Dumort family, 40–80 cm high. It grows at an altitude of 400–1600 m above sea level. Propagated by seeds and vegetatively. The weight of 1000 seeds is 0.3 g. The life cycle lasts 10-15 years. Growth begins in February – March, budding in July. The seeds ripen in November. Prefers salty and brackish soils, drought-resistant and cold-resistant. Resistant to diseases and pests.

The reserves are sufficient for medicinal purposes. The wormwood of the Balkhans now covers more than 1 million 800 thousand hectares. The stock of raw materials is 2–15 centners per hectare.

The aerial part of the plant was collected on August 27, 2018 in the Nazarekerem gorge of the Big Balkhan. Its chemical composition was determined by the method of semi-quantitative spectral analysis of plant ash calculated on its dry weight.

The tincture of the terrestrial part of the Balkhan wormwood was prepared in a ratio of 1: 5 and 1:10 on the basis of modern requirements in the pharmacopoeia and the technology of drug preparation. Tincture and extracts from medicinal plants, which do not contain highly active biologically active substances, are prepared in a ratio of 1: 5, and tincture and extracts from medicinal plants, which contain highly active biologically active substances in a ratio of 1:10. Therefore, in our work, we performed the appropriate calculations for the preparation of the tincture, based on the requirements of the Pharmacopoeia, and applied maceration (partial grinding) to prepare the tincture from some medicinal plants, using 40%, 70% and 96% solutions of ethyl alcohol for the extractant. Calculations for the preparation of ethyl alcohol solutions were carried out in accordance with the requirements for the release of volume 1 of the State Pharmacopoeia. The concentration of the prepared ethyl alcohol was determined using an alcohol meter.

In our work, for the preparation of tinctures and oil extracts, we used laboratory equipment, pharmaceutical scales, beakers and test tubes of a certain volume (100, 250, 500, 1000 ml), porcelain dishes for grinding, packaging material and filters.

As a result of the spectral analysis of the terrestrial part of the Balkhan wormwood plant, 51 macro and microelements were identified. Of these, in mg / kg: potassium - 13434, sodium - 1104, phosphorus - 2743, sulfur - 4291, calcium - 8608, magnesium - 2043, iron - 1454, zinc - 47.2, manganese - 69.9 and copper - 11 , 8 and other trace elements.

The aerial part of the Balkhan wormwood contains a large amount of vitamin C, that is, up to 510 mg%.

Referring to various literary sources, they created a model of a chemical burn of the esophagus in laboratory animals and an inflammatory and erosive-ulcerative process of the stomach and duodenum. The studies used white laboratory rats from vivariums randomly taking food and water, with a body weight of 170–250 g, 10 for each group. The tests were carried out in accordance with the international requirements of the Protocol on the Protection of Vertebrate Animals for Experimental and Other Scientific Purposes (2010).

A chemical burn of the esophagus was achieved with 30% vinegar, an inflammatory and erosive-ulcerative process with acetylsalicylic acid (aspirin 150 mg / kg). Vinegar was given once, and acetylsalicylic acid was given 2 times every 4 hours for 10 days. Vinegar and drug were administered via a gavage with a syringe. Histological studies showed that pathological changes in internal organs, especially in the esophagus, were in the form of atrophy of the multilayer squamous epithelium of the esophagus, stomach, hyperkeratosis and acanthosis together with vacuolar degeneration of cells, muscular dystrophy, uneven vascular dystrophy, vascular irregularities, erythrocyte stasis. After

creating the disease model, the subjects were given tincture and oil extracts of Balkhan wormwood for 4 weeks at a rate of 1.5–2.0 ml every 4 hours a day. Rats actively take medicinal oil extracts and feel good after consuming the oil.

The absence of toxic substances in the mineral composition of the terrestrial part of the Balkhans wormwood and a very small amount of some considered harmful (compared to the permissible amount), allows us to recognize it as a medicinal plant that is safe for the human body.

Histological studies have shown that the oil extract of Balkhan wormwood has a more positive effect on burns of the esophagus and stomach in experimental animals: regeneration was rapid in groups of white rats [11] who received the oil extract of Balkhan wormwood in a ratio of 1:10, which they took for 24 days.

The therapeutic effect of the Balkhan wormwood oil extract is being studied in the field of pharmaceutical herbal medicine, and it is planned to introduce it in hospitals and sanatoriums. Medical and scientific workers of our country are also working on purchasing high-quality medicines based on local medicinal plants used for the prevention and treatment of diseases, which is one of the main tasks to fully meet the needs of the population and medical institutions.

Thus, the study of the botanical and pharmacological features of the terrestrial part of the Balkhan wormwood and the results of experimental studies on animals prove that the medicinal plant described above, used in Turkmen folk and traditional medicine, allows its use in gastroenterology, cardiology, as well as in the pharmaceutical industry of Uzbekistan.

Literature:

1. Akmuradov, A. Annotated list of endemic plants of Turkmenistan // Modern research and development. 2016. No. 6 (6). S. 128-146.
2. Akmuradov, A., Rakhmanov O. Kh., B. K. Shayimov. Abstract of endemic flora of Turkmenistan: results of work 2007–2017. Kazan: Buk, 2018 .-- 142 p.
3. Annamammedova, G.M., Mukhammetgulyeva O.S., Akmuradov A., Shayimov B.K., Sayfullaeva G.A. Elemental composition of Balkhan wormwood (Artemisa balhanorum), its cardioprotective and pleiotropic pharmacological properties // International scientific conference "Health - 2019 ". Ashgabat: Turkmen State Publishing Service, 2019, p. 744.
4. Akmuradov, A.A., Ibragimov M.Kh., Shayimov B.K.Balkhanskaya wormwood - cardioprotective, endemic medicinal plants of Turkmenistan // X Congress of the Association of Cardiologists and the Congress of Therapists of the Republic of Kazakhstan, IX Congress of the Association of Cardiologists of the Turkic world, dedicated to 40 anniversary of the WHO Declaration of Alma-Ata on PHC. Almaty, 2018, p. 8.

5. Berdymukhamedov, G. Medicinal plants of Turkmenistan, vol. I. - A .: Turkmen State Publishing Service, 2009. - 384 p.
6. State Pharmacopoeia of the USSR. XI edition. Issue 2. - M .: Medicine, 1990. Kurbanov, DK, Vlasenko G. P. Wild useful plants of Turkmenistan // Problems of desert development, 2006. No. 2. P. 9–12.
7. Midday, L.V., Sotnik V.F., Khlaptsev E.E. Essential oil and medicinal plants. - M .: Kolos, 1979 .-- 288 p.
8. Cox, P. A. Plants, people, and phytochemicals: therapies or threats // XII International Botanical Congress. Vienna, 2005. P.5.
9. Ramaswamy, N. M. Medicinal plants research and development for sustainable health // XII International Botanical Congress. Vienna, 2005. P. 175.
10. Ibragimow, M. H., Akmyradow A., Kiçigulowa T. P. we başg. Balkan ýowşanynyň (Artemisa balchanorum Krasch.) Ýag ekstraktynyň gyzylödegiň ýanygyna täsiri // “Nesilleriň saglygy - döwletimiziň baýlygy” atly ylmy-amaly maslahatyň makalndalar ýyyy - A .: Ylym, 2016. - 80–82 ss.