

DEVELOPMENT OF A NEW PHYTOMEDICINE BASED ON ACHYRANTHES FOR THE TREATMENT OF UROLITHIASIS

Konovalenko I. S., Kovalyova T. M., Lerner Yu. R.
National University of Pharmacy, Kharkiv, Ukraine

Introduction. Over the centuries, humankind has accumulated considerable experience in the use of herbal medicines, which, compared to the products of organic synthesis, have a milder effect, are less toxic, do not cause addiction and allergies. Moreover, herbal remedies not only do not suppress the body's defenses, but on the contrary, are active against many strains of microorganisms that have become resistant to antibiotics. In addition, herbal remedies can strengthen a person's immunity, helping him to cope with the disease. In recent years, the interest of both doctors and patients in the use of herbal medicines in the treatment of various diseases of the internal organs has increased significantly.

The aim of the study was to develop a new phytomedicine based on *Achyranthes* for the treatment of urolithiasis.

Materials and research methods. As an active substance for the treatment of urolithiasis was chosen *Achyranthes*.

Results. *Achyranthes bidentata* Blume – tropical plant of the amaranth family – Amaranthaceae, which grows in East and Southeast Asia. In Ukraine it is found in Polissya. This medicinal plant was recorded in the Chinese Pharmacopoeia, one of the first pharmacopoeias in the world. Roots, leaves, seeds are used as medicinal raw materials. In medicine, the root is often used, which has a rich chemical composition: triterpene saponins (oleanolic acid and its glycoside), phytosteroids (ecdysterone, incosterone, rubosterone), polysaccharides, a large number of potassium salts, amino acids (glycine, serine, L– threonine, L–proline, L–tyrosine, L–tryptophan, L–valine, L–phenylalanine, leucine), alkaloids and coumarins. About 38 saponins were isolated from the roots of the straw strawberry, the most important of which are triterpene saponins, derivatives of oleanolic acid.

Modern pharmacological studies have shown that *Achyranthes* has many important types of biological activity: anti–inflammatory, antibacterial, immunomodulatory, antioxidant, antiosteoporosis, neuroprotective and others.

Aqueous extract of the roots *Achyranthes* reduces the regeneration of the nervous system after injury in rabbits. The polysaccharide fraction can be used as a neuroprotector for the treatment of peripheral nerve injuries. Alcohol extracts from different parts of the *Achyranthes* have high antibacterial activity. They are used as antibacterial agents to treat kidney stones.

Conclusions. Analysis of scientific publications has shown that *Achyranthes* has a wide range of pharmacological action due to the content of different groups of biologically active substances. The main active ingredients of straw strawberry are saponins and steroids. The creation of a dry extract of strawberry may be a promising phytosubstance with pronounced antibacterial and anti–inflammatory effects and can be used in herbal medicine for urolithiasis. Based on the above, the development of a drug based on a dry extract of *Achyranthes* is an actual topic of study.