

DEVELOPMENT OF FORMULATION AND TECHNOLOGY OF MEDICINAL PREPARATION IN THE CAPSULES FORM WITH ANTIINFLAMMATORY ACTIVITY

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Introduction. Pain, fever and inflammation occupy one of the first places among reasons of population disability. Nonsteroidal anti-inflammatory drugs (NSAIDs) are highly effective in the alleviation of these adverse conditions. Such effective NSAID as diclofenac sodium is commonly indicated in the treatment of rheumatoid arthritis and osteoarthritis, relief of mild-to-moderate acute and chronic pain. Diclofenac is widely used around the world. There is a lack of domestic diclofenac medicines in Iraq. Therefore creation of new medicinal preparations with diclofenac for pharmaceutical market of Iraq is topical.

Aim. The purpose of our work was a development of the composition and technology of hard gelatin capsules for oral administration with diclofenac sodium.

Materials and methods. The substance, auxiliaries, mixtures for encapsulation and prepared capsules on their basis were research subject. The research methods were used according United States Pharmacopeia (USP).

Results and discussion. The composition of capsules with diclofenac sodium was formulated under the supervision of Associate Professor Sichkar A.A. The dose of active pharmaceutical ingredient was 50 mg/capsule. The pharmacotechnological properties analysis of the test substance diclofenac sodium had shown that the substance had poor flowability, hence it was concluded that direct filling of powder into capsules was not possible. It is predetermined application of special inactive ingredients for improvement pharmacotechnological characteristics. Capsule mixtures on the basis of substance were investigated with combinations of lactose monohydrate, potato starch, croscarmellose sodium, aerosil, talc, magnesium stearate in different correlations. Since diclofenac sodium is poorly soluble in water, starch and croscarmellose sodium were used to increase penetration of the stomach liquid into encapsulated mass in capsules. Aerosil and magnesium stearate reduces the friction between particles of the composition and the surface friction between particles of the composition and the equipment surface. It was established that lactose monohydrate and aerosil have more influence on flowability of the active substance. The capsules samples were stored in plastic containers.

Conclusions. Auxiliary ingredients and technology of capsules with diclofenac sodium for manufacture in Iraq were chosen as a result of research. The received capsules correspond to all indexes of the USP (39th edition) for capsules.