

DEVELOPMENT OF THE COMPOSITION AND TECHNOLOGY OF ANTI-INFLAMMATORY GEL FOR THE TREATMENT OF THE MUSCULOSKELETAL SYSTEM DISEASES

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Introduction. One of the most urgent social problems of healthcare of the nation are the musculoskeletal system diseases, which occur because of degenerative processes of conjunctive tissue and injuries or wounds of various etiologies with subsequent inflammation, diagnosis and treatment of which often causes significant complications. According to the State Register of Pharmaceutical drugs the assortment of drugs of the group «M02 – local action medicinal products usage for joint and muscular pain» is presented on the Ukrainian market only by some substances which produce just short – term anti – inflammatory effect and indirectly affect the pain syndrome oppression. First of all this applies to Nonsteroidal anti-inflammatory drugs, in particular diclofenac sodium and its derivatives, which can not provide polyvalent pharmacological effect and effective recovery of conjunctive tissue and pharmacotherapy of these pathologies to the full extent. Therefore, the development and introduction of drugs to treat diseases of the musculoskeletal system based on new highly – effective substances is essential for maintaining the health of our population.

Aim. Substantiation of composition and the development of technology of anti-inflammatory and analgesic action gel for treatment of injuries and pathological states of the musculoskeletal system.

Materials and methods. The objects of research were active pharmaceutical ingredients – propolis phenolic hydrophobic drug (RC № UA/4505/01/01, Order Ministry of Health of Ukrainian № 337 from 07.06.2011 p.), local anesthetic, menthol, essential oils, additive agents for medical use adjuvants, the rational concentration of which was established in accordance with the analysis of modern literature and experimental research and gel of anti-inflammatory and analgesic action. The paper uses the organoleptic, physical, chemical, pharmaceutical and technological, graphical and statistical research methods that enable assess the quality of the developed drug objectively.

Results and discussion. The technological properties of substances were studied and rheogoniometry with the aim to find the rational basis for the new gel was conducted and the choice of gelling agent and neutralizing agent and their concentration was proved and the indices of quality of the developed drug were defined.

Conclusions. The composition of anti-inflammatory and analgesic action gel was theoretically proved. The technology of production of the gel was developed. The set of experimental studies was conducted and retention samples of the gel were put up in order to study its stability and its period of validity.