RELEVANCE OF COMBINED GEL DEVELOPMENT ON THE BASIS OF BEEKEEPING PRODUCTS FOR TREATMENT OF SPORTS MICROTRAUMA

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In modern conditions with admission of professional sports status, more relevance get the issues of unfavorable factors influence that expect athletes during continuous sports activities associated with significant physical stress or overloading as a whole, as well as new integrated approaches to their pharmacotherapy and rehabilitation after injuries. Treatment of injuries of the locomotor system (LMS) in sports medicine is almost impossible without general and local application of modern chemotherapeutic drugs.

Nowadays in rehabilitation of sports micro traumas are widely used soft dosage forms and particular significance obtains the use of gels, which have several advantages over other soft dosage forms.

In today's pharmaceutical market of Ukraine there is a significant range of local medical products for the prevention and treatment of traumatic injuries.

However, existing drugs are mainly represented by only a few substances, capable to do an anti-inflammatory effect and influence on the inhibition of pain only for a short time.

This applies particularly NSAIDs (diclofenac sodium and its derivatives) which can not fully provide long-term pharmacological effect and effective rehabilitation of athletes.

Considering the lack of domestic combined drugs for the treatment of inflammatory diseases of the LMS and sport micro traumas, which simultaneously exhibit analgesic and anti-inflammatory effects, and the inaccessibility and low efficiency of existing imported medicines, development and implementation in the industrial production of new local drugs is an important task of medicine and pharmacy.

Unabated interest for the modern medicine in this regard represents a development of original drugs for topical application based on natural origin compounds, including bee products.

Undoubtedly, this is due to the growing number of allergic reactions to synthetic drugs that are not only manifested in the skin, but also adversely affect the body as a whole.

Bee products have long been used in folk medicine to treat various pathologies. They confirmed the biological value of basic research of domestic and foreign scholars.

For the treatment are use royal jelly, pollen, propolis, apitoxin.

In addition, the effectiveness and harmlessness of bee products that have long been used to prevent and treat many diseases, today is out of doubt.

Domestic industry produces standardized substance of hydrophobic phenolic propolis preparation (HPPP) (Praeparatum Propolis phenohydrophobum) (RP № UA/4505/01/01, MOH Ukraine № 337 from 07.06.2011),developed at D.P. Salo chemist's technology of drugs department under supervision of Ukrainian Academy of Sciences Academician, Doctor of Pharmacy, professor A.I. Tikhonov.

The substance exhibits a wide spectrum of pharmacological action (anti-inflammatory, antimicrobial, antiradiation, capillary-strengthening et al.).

It is effective in treating a number of diseases in various dosage forms, water and alcoholic solutions, ointments, aerosols, emulsions, patches, pills and other.

On the basis of the compound a number of drugs with different orientation of action has been created, including those produced in industrially in our country: capsules "Apiprost", tablets "Proalor" (LLC "Pharmaceutical company " Zdorovya ", Kharkiv), suppositories "Propolis" (JSC "Lekhim-Kharkiv" Kharkiv) and others.

Given the above, it is feasible to create a soft dosage form in the form of combined gel of anti-inflammatory and local anesthetic action on the basis of standardized substance of a bee products - HPPP and compounds of synthetic origin for the prevention and treatment of LMS (tendons, muscles and joints) and micro traumas specific to sports medicine (bruise, sprains, strains, torn ligaments, tendons, etc.).

By today, its composition and technology have been theoretically and experimentally justified, rational concentration of active pharmaceutical ingredients has been set, the structural, mechanical and technological properties have been studied in order to choose a basis for the investigated gel, the choice and concentration of gelling agent has been performed, and also established QC indices have been included in the MQC project for the designed drug.

Model samples of gel have been put into storage in order to study the stability of the gel and expiry date.