

Key words: chiral drugs, polarimetry, polarimeter, optic method, quality control, Pharmacopoeia

354. THE DEVELOPMENT OF THE TECHNOLOGY OF PREPARATION OF A NEW, ORIGINAL, COMBINED OINTMENT CONTAINING IZOHYDRAFURAL, METHYLURACIL AND BENZOCAINE

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Introduction: The pathogenesis and treatment of infected wounds continues to be a challenging problem and represents a considerable healthcare burden. An effective treatment of wound infection requires combined drugs, which may reduce time to healing and minimize impact on patients, healthcare systems and society.

The purpose of the study was to develop the technology of preparation of a new, original, combined ointment containing of izohydrfural, methyluracil and benzocaine. It aims to Associate the antibacterial action of izohydrfural, the regenerating action of methyluracil and the local anesthetic action of benzocaine. The active substances have been incorporated in different pharmaceutical excipients to develop the optimal formula of the combined ointment. It was established that the lipophilic excipients are the most optimal base for the technology of the ointment.

Materials and methods: It was used the active substances: izohydrfural, methyluracil and benzocaine, the excipients: vaseline, oleum vaselini, cetostearyl alcohol, polyethylene glycol 400 and purified water.

Discussion results: It is already known the antibacterial action of the original, active substance izohydrfural, which is a derivative of 5-nitrofurantoin with valuable insights into the treatment of infected wounds and not only. The polyvalent nature of the infection requires a complex treatment. That's why the association of izohydrfural with regenerating substances and local anesthetics in the same pharmaceutical form, will solve the problems related to pain and term of regenerative process, facilitating the treatment of infected wounds.

The active substances have been incorporated into lipophilic and hydrophilic excipients to develop the manufacturing technology of the combined ointment. It was investigated 12 compositions according to general criteria of the preformulation of ointments. The lipophilic excipients proved to be the most optimal, due to the lipophilic nature of benzocaine and methyluracil. Izohydrfural was incorporated using the water in oil emulsion base: cetostearyl alcohol.

It was established the sequence of incorporation of the ingredients into the ointment. The technological process of preparation of the combined ointment contains the following steps: (1) Preparation of the active substances; (2) Preparation of the excipients; (3) Incorporation of the active

substance into the base of ointment; (4) Quality control of the combined ointment; (5) Packaging of finished product.

Conclusion: It was developed the technology of preparation of a new, original, combined ointment containing izohydralfural, methyluracil and benzocaine, which will be the basis for the Technological Laboratory Regulation for manufacture of investigational series of product.

Key Words: izohydralfural, methyluracil, benzocaine, technology, ointment.

355. CHAMOMILLAE FLOS AS A VALUABLE RESOURCE IN THE NEW TRENDS OF NEUROLOGICAL DISORDERS

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Introduction: *Matricaria chamomilla* L. is a well-known and a long used medicinal plant. The rational phytotherapy trends impose strict control of the plant material used to treat ailments. Therefore, the source and the quality of the raw material is highly important for obtaining a herbal medicinal product with certain biologic activity. Our aim was to obtain, standardize (TLC, UPLC) and biologically evaluate a hydro-alcoholic extract from chamomile flowers (ethanol 50 %; 2.5 g/100 mL) of known origin.

Materials and Methods: The phytochemical analysis used thin layer chromatography (TLC) and liquid chromatography techniques (UPLC). Since most of the pharmacological properties of chamomile extracts are known, we used several in vitro (Folin –Ciocalteu assays, scavenging capacity against DPPH and ABTS radical) and in vivo (radial plus maze, forced swimming, Y test) tests to assess its potential in neurological disorders such as Parkinson and Alzheimer. The animal model was induced by intracerebroventricular (i.c.v.) injection of scopolamine and all surgical procedures were conducted under aseptic conditions with sodium pentobarbital anesthesia, to minimize animal suffering and to reduce the number of animal used (white, Wistar male rats, b.w 200±50g). The animal's behavioral activities within pharmacological tests were statistically analyzed with two-way analysis of variance (ANOVA). All results are expressed as mean ± standard error of mean (S.E.M.).

Results: TLC and UPLC confirmed the presence of luteolin and apigenin glycosides, as well as caffeic and chlorogenic acids. Apigenin-7-glucoside amounted up to 0.42%, higher than the European Pharmacopoeial limit (minimum 0.25%). Total polyphenol content of the extract was 68.70 ± 2.55 mg GAE/g. The investigated extract had a good scavenging activity both against DPPH radical (IC₅₀ = 47,8 ± 1,4 µg/mL) and ABTS cation (IC₅₀ = 21,4 ± 0,2 µg/mL), comparable with the IC₅₀ values of the chosen standard (caffeic acid). The scopolamine-treated rats exhibited disorientation, a decreased exploratory activity, a low percentage of the time spent and number of entries in the open arm within elevated plus-maze test and a decreased swimming time and increased immobility time within forced swimming test. Intraperitoneal administration of chamomile extract in doses of 25 mg/kg b.w. or 75 mg/kg b.w. significantly induced anxiolytic- and antidepressant-like effects. Moreover, short memory was improved considerably as compared to the positive control group.