

stratification we saw. That's why we decided to use for preparation of emulsion polysorbate-80 and quantity of fish oil 15.0 for preparation of emulsion with mass 100.0.

**Conclusions.** As a result of our studies, we have come to the final composition of a new external emulsion for the treatment of allergic diseases, which includes the second generation antihistaminic substance – loratadine, antiseptic and analgesic substance – DMSO, as well as fish oil, which also has anti-inflammatory and soothing effect.

## **SUBSTANTIATION OF THE COMPOSITION AND TECHNOLOGY OF THE OINTMENT ON AN EMULSION BASIS FOR THE TREATMENT OF ERYSIPELAS**

Khoruzhenko Ye. V.

Scientific supervisor: associate professor Azarenko Yu.M.

National University of Pharmacy, Kharkiv, Ukraine

outland2006@gmail.com

**Introduction.** Among all pathologies of infectious nature, the degree of prevalence of erysipelas of tissues is immediately after acute respiratory diseases, infections of the gastrointestinal tract and hepatitis. Due to the presence of relapses in a significant number of patients, as well as the emergence of frequent severe complications and residual events, this disease becomes of great socio-medical significance. According to the sampled data, the incidence is, on average, 15-20 cases per 10,000 population. In this case, as a rule, not more than 10-12% of the total number of patients are hospitalized. The disease is recorded mainly in older age groups. In the last decade there has been a tendency for a sharp increase in the number of patients with destructive forms of erysipelas.

**Aim.** Substantiation of the choice of active pharmaceutical ingredients for the creation of a complex ointment.

**Materials and methods.** During of the composition development of the extemporal ointment for the treatment of erysipelas, the following active pharmaceutical ingredients were used: dioxysol, sulfadimezin, hydrocortisone acetate, cocoa butter, glycerol monostearate and cetyl alcohol.

**Results and discussion.** Treatment of patients with erysipelas is complex and is carried out in a differentiated manner taking into account the nature of local manifestations, the severity of the course of the disease and the presence of complications. The complex of treatment measures usually includes etiotropic, desensitizing, detoxification, symptomatic therapy.

In the analysis of the range of industrial products used for the treatment of erysipelas, it was found that virtually all drugs used for systemic and local therapy erysipelas contain antibiotics or sulfanilamides. That is why, when developing the composition of the extemporal ointment, it was also suggested to introduce components that have an antibacterial effect.

The composition of the drug was decided to introduce the following active pharmaceutical ingredients: sulfadimezin, dioxysol, hydrocortisone acetate.

Sulphadimezin is a short-acting sulfanilamide preparation. Active against gram-positive and gram-negative cocci, E. coli, shigella, klebsiel, cholera vibrio, gas gangrene causative agents, anthrax, diphtheria, catarrhal pneumonia, plague, as well as chlamydia, actinomycetes, and toxoplasmosis agents. This medicinal substance has bacteriostatic effect.

Dioxysol (Dioxysol®-Darnitsa) is a combination medicine for local use, the active substances of which are dioxidine and lidocaine. The solution has a strong antibacterial, local anesthetic and moderate hyperosmolar effect, reduces inflammation, stimulates the repair processes. Dioxidine has a pronounced antibacterial effect on gram-negative and gram-positive, aerobic and anaerobic, spore-forming and asporogenous microflora. Lidocaine has a local anesthetic effect due to the blockade of potential dependent Na<sup>+</sup> channels, which prevents the generation of impulses at the end of the sensory nerves and conduction of pulses on the nerve fibers. At local application, it expands blood vessels, does not induce local irritation.

Hydrocortisone acetate has anti-inflammatory, antispasmodic, desensitizing, anti-toxic, anti-allergic, immunosuppressive and anti-metabolic action. The ointment was injected as 2.5% solution.

Cocoa butter has pronounced anti-inflammatory and softening effects. It was injected as a hydrophobic phase of the ointment base.

As emulsifiers for the formation of a stable emulsion ointment basis, it was proposed to use the following surfactants: glycerol monostearate, cetyl alcohol, or, if necessary, a combination thereof.

Glycerol monostearate – a texture component and an emulsifier, which has the same antiviral activity. It protects the skin from adverse environmental factors; moisturizes, prevents moisture loss; softens the skin; promotes better penetration of active substances.

Cetyl alcohol, which belongs to the class of fatty alcohols, not only does not provoke dryness and dehydration of the skin, but, conversely, as part of emulsion systems plays the role of a beautiful moisturizer, protecting the epidermis from overdrying. Advantages of the application include its safety, non-toxicity and natural origin. It also has an occlusive effect, which can create a moisture-retaining film, improves the permeability of the lipid barrier for active substances and softens the skin.

To select the emulsifier and its amount, samples of ointments containing selected active pharmaceutical ingredients and emulsifiers in different concentrations were investigated.

**Conclusions.** Based on the results of experimental studies, it was determined that to obtain a stable emulsion system, it is necessary to use glycerol monostearate at a concentration of 20% of the weight of the oil phase. Also, the technology of the ointment was proposed on the proposed emulsion basis.

## **DEVELOPMENT OF COMPOSITION AND TECHNOLOGY OF GEL-MASKS WITH ARGIRELINE**

Kozak L.A.

Scientific supervisor: assoc.prof. Kovalova T.M.  
National University of Pharmacy, Kharkiv, Ukraine  
atl@nuph.edu.ua

**Introduction.** Mimic wrinkles on the human skin appear in typical places, as a result of the reduction of mimic muscles. Due to the danger and side effect of injection methods of wrinkle correction in modern cosmetology, external agents became widely popular: creams, gels, masks. The most effective biologically active substances of this segment of cosmetic products are polypeptides that are used in age-sensitive skin care products, hair growth stimulation, alopecia therapies.

**Aim.** The aim is to justify the composition of the healing cosmetic mask, the active substance of which is acetyl-hexapeptide-3.

**Materials and methods.** Analysis and systematization of literature data, physical-chemical and structural-mechanical research were used.

**Results and discussion.** Analysis of literature data showed the prospect of gel form for the development of gel mask with Argireline. Gels do not cause clogging of skin pores, they are quickly and evenly distributed, are absorbed better than ointments; after applying the gel do not leave a fat trace and do not contaminate clothing. As a biologically active substance we selected acetyl-hexapeptide-3, known under the trade name Argireline. This substance provides a muscle relaxant effect on the muscles of the face, thereby eliminating the main cause of mimic wrinkles. This is a water soluble substance, therefore, a hydrophilic gel was chosen as the basis. Gel with Argireline was made on the basis of water and hydrophilic elastomers – sodium alginate, carbopol and aristoflex.

The study of physical and chemical parameters of the samples obtained, structural and mechanical studies have shown that the optimal gel formulation for the processed medium is aristoflex (Aristoflex AVC). Gels based on it can be prepared both in hot (up to 80 °C), and in cold way. Since the peptide substance is included in the gel, we chose a cold method of preparation (the temperature does not exceed 40 °C). A transparent, glossy gel, which was uniformly and easily applied to the skin, was obtained. Rheological parameters of the obtained sample were studied.

**Conclusions.** Based on the results of the physicochemical and structural-mechanical studies of samples with Argireline, an optimum gel formulation and its concentration for an anti-aging gel mask was established.