

DEVELOPMENT OF METHOD FOR NITROFURAL QUANTITATIVE DETERMINATION IN COMPOUNDING OINTMENT

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Introduction. The large group of diseases, including dermatological diseases, is associated with damage of the certain type of microorganism. That's why antimicrobial products are widely used in medical practice. The main requirements for them are high activity and its retention in biological liquids; wide spectrum of antimicrobial activity; quick action at different pH value; high solubility; sufficient surface activity; and chemical resistance. Antimicrobial agents should not cause local irritation, sensitization and interrupt the process of wound healing.

General toxicity of the antimicrobial substance is taken into account for its evaluation. Antiseptic agents are divided into two groups: organic and inorganic origin. The first group includes Nitrofurazone, which is often used in many compounding dosage forms preparation, including ointments.

Aim. Development of the method for Nitrofurazone quantitative determination in compounding ointment in the presence of Procaine hydrochloride and Hydrocortisone butyrate.

Materials and methods. Spectrometer EV60 was used for the analysis. Absorption spectroscopy method was used for the quantitative determination of Nitrofurazone. The method is based on its ability to form a colored solution after reacting with Sodium hydroxide.

Results and discussion. Hydrocortisone butyrate absorption maximum is close to the absorption maximum of Nitrofurazone. Therefore, it will affect the accuracy of Nitrofurazone quantitative determination in the ointment by the absorption spectroscopy method. The ointment sample was dissolved in ether considering the ability of Hydrocortisone butyrate to pass into the ether extract. Then, the extract was washed with water for three times. To complete Nitrofurazone extraction, Sodium chloride was dissolved in water. To form the colored compound, the solution of Sodium hydroxide was added to prepared water extract. Quantitative determination of Nitrofurazone was carried out using the absorption spectroscopy method at a wavelength of 440 nm.

Procaine hydrochloride also passes into the water extract but it will not affect the results of analysis, since its reaction with Sodium hydroxide will not lead to the formation of colored products.

Conclusion. As a result of research, the scheme for sample preparation and quantitative determination of Nitrofurazone in compounding ointment in the presence of Hydrocortisone butyrate and Procaine hydrochloride was developed.