DEVELOPMENT OF EXPRESS IDENTIFICATION OF FUROSEMIDE SYRUP

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Introduction: The usage of test systems for the quality control of active ingredients is the very important part of express analysis of medicinal forms. Furosemide (4-chloro-2-[(furan-2-ylmethyl)amino]-5-sulphamoylbenzoic acid) is a widely used diuretic medication prescribed both for adults and children. The pediatric dosage form of furosemide is its suspension in the simple syrup of sucrose prepared ex tempore.

Purpose of the study: The purpose of our study was to elaborate a convenient method for the identification of furosemide in the dosage form of syrup based on its composition and properties.

Materials and methods: We used the analytical balance Axis ANG-200 and the methods of chemical identification.

The object of our investigation was furosemide syrup prepared from furosemide tablets and simple syrup of sucrose. The object was checked for the possibility of express identification for the functional groups.

The substance of furosemide forms the coloured precipitates with such salts of heavy metals as copper sulphate, ferric chloride and cobalt (II) chloride (nitrate). But in the presence of sucrose the salts of cobalt (II) cannot be used as in alkaline medium as they form a violet colouration with sucrose. To elaborate the usage of salt-formation reaction for the express analysis of furosemide we checked the possibility of it taking place on the paper strips treated with copper sulphate and ferric chloride. Our studies showed that furosemide suspension in the simple syrup gives green spots with copper sulphate, and orange-red spots with ferric chloride on the corresponding paper strips. We determined the minimum concentration of furosemide in simple syrup (5mg/ml) for which identification reaction with salts of heavy metals gives a positive result, and the optimum syrup-sodium hydroxide dissolution ratio for which the identification takes place on the test strips. Furosemide suspension in simple syrup after the extraction of the active ingradient in the reaction for a primary aromatic amino group (diazotization by sodium nitrite in the presence of hydrochloric acid and next azo coupling) gives a characteristic red colour of azo dye.

Results and conclusion: The obtained results suggest the ways of furosemide express identification in the pediatric dosage form of syrup and give the possibility to identify furosemide reliably.