

DEVELOPMENT OF QUANTITATIVE DETERMINATION METHOD FOR FUROSEMIDE IN COMPOUNDED SYRUPS

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Introduction. Furosemide is used in the management of oedema associated with congestive heart failure, nephrotic syndrome and hepatic cirrhosis. Nowadays compounded oral dosage forms, containing diuretics such as furosemide, hydrochlorothiazide and spironolactone are widely used in pediatric practice. This is due to the lack of similar finished pharmaceutical products, low cost and simplicity of application. Syrups and powders are preferred dosage forms. Syrups are used in pediatrics for masking medicines taste. The advantage of convenience in administration and higher bioavailability, when compared to oral solid dosage forms, make syrups more appropriate for children. Development of analytical methods for quality control and stability study of extemporaneously prepared medicines are one of the most important tasks of the contemporary pharmaceutical analysis.

Therefore, the **aim** of our work was to develop method for quantitative determination of furosemide in compounded syrups.

For the purpose of this study 5mg/ml suspensions of pharmaceutical substance furosemide (Ipca Laboratories Ltd batch 5074HR11), furosemide tablets (Arterium “Київмедпрепарат”) and crushed furosemide tablets in simple syrup USP were prepared. The absorbance of 0.005mg/ml solutions of these samples in 0.1M sodium hydroxide were measured at a wavelength of 271nm, using an Ultraviolet(UV) spectrometer (“Evolution 60s”).

Results of the assay after five measurements showed percentage content of $100.3 \pm 0.4\%$, $104.1 \pm 0.7\%$ and $103.2 \pm 0.4\%$ for samples of the pharmaceutical substance, furosemide tablets and the compounded syrup of furosemide. Intraday stability (over 7 hours 30 minutes) for furosemide in the tablet and syrup samples showed percentage content of $102.8 \pm 1.2\%$ and $103.5 \pm 0.6\%$ respectively.

Conclusions. This method could be used for quantitative determination of furosemide in syrups since the excipients in tablets and simple syrup did not significantly affect the results obtained using UV-spectrometry. To further prove the possibility of using this method in pharmaceutical analysis subsequent validation is required.