STUDIUM VLIVU PŘÍSADY DERIVÁTŮ CELULOSY NA HMOTNOST OČNÍCH KAPEK

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Summary

In this rigorous work the influence of the ingredient of the derivates of cellulose on the weight of eye drops obtained from the compressible plastic vial in combination with the plastic dropper tip („Bralen“) was observed. The dropping of the solutions of methylcellulose, hydroxypropylmethylcellulose, hydroxyethylcellulose and sodium carboxymethylcellulose in the concentration range of 0,15 – 1,00%, a significant influence was observed on the weight of the eye drops in both dispensing angles, 90° (vertical dropping) and 45° (inclined dropping). The addition of the 0,15% MC and HPMC increased the weight at least 8%, while the 1% additive increased the weight more than doubled in comparison to water. HEC and NaCMC had significantly less influence on the weight of drops in comparision with MC and HPMC, which became evident in the slight increase of the weight of the drop in correlation with the increase of the concentration of the polymer. The 1% solution of NaCMC showed a maximum increase of the weight of the drop of 13% compared to water.

As a result of changing dispensing angle from 90° to 45°, a significant decrease of the drop´s weight was shown only in the case of the additives, HEC and NaCMC. The wetting of outer surface of the top of the dropper tip, while dropping of the solutions, MC and HPMC, at 45°, lead to the creation of drops with the same weight as the drops created in the upright position.

Because of slight increase of the weight of the drop and relatively easy preparation of the stock solution without needing (řízené smáčení) of particles,

it is possible to recommend NaCMC in concentrations up to 1% for the preparation of viscous eye drops in the pharmacy, only in the case that there are no incompatibilities with the active ingredient.