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Viability of lactobacillus acidophilus in various vaginal tablet formulations

Fazeli M.R., Toliyat T., Samadi N., Hajjaran S., Jamalifar H.

Abstract:

The lactobacilli which are present in vaginal fluids play an important role in prevention of vaginosis and there are considerable interests in formulation of these friendly bacteria into suitable pharmaceutical dosage forms. Formulating these microorganisms for vaginal application is a critical issue as the products should retain viability of lactobacilli during formulation and also storage. The aim of this study was to examine the viability and release of Lactobacillus acidophilus from slow-release vaginal tablets prepared by using six different retarding polymers and from two effervescent tablets prepared by using citric or adipic acid. The Carbomer–based formulations showed high initial viablility compared to those based on HPMC-LV, HPMC-HV, Polycarbophil and SCMC polymers which showed one log decrease in viable cells. All retarding polymers in slow release formulations presented a strong bacterial release at about 2 h except Carbomer polymers which showed to be poor bacterial releasers. Although effervescent formulations produced a quick bacterial release in comparison with polymer based slow-release tablets, they were less stable in cold storage. Due to the strong chelating characteristic of citric acid, the viability was quickly lost for aqueous medium of citric acid in comparison with adipic acid based effervescent tablets.

Keywords:

Lactobacillus acidophilus ، Vaginal tablet

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