ABSTRACT

The Effect of Concentration Carbopol 934P towards Mucoadhesive Characteristics, and Release Ranitidine HCl from Sustained Release Mucoadhesive Ranitidine HCl Tablets.

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The purpose of this research was to prepare a gastroretentive drug delivery system of Ranitidine HCl. Mucoadhesive drug delivery system used to target drug release in the stomach or to the upper part of the intestine. Currently, mucoadhesive tablets are one of the important categories of drug delivery systems with gastric retentive behavior. Ranitidine hydrochloride is a H_2 blocker and absorbed from the upper part of gastrointestinal track and hence there is need to develop a dosage form that release the drug in stomach so that it can be absorbed from upper part of gastrointestinal track leading to improved bioavailability.

Three different formulas of ranitidine HCl were prepared by dry granulation using different concentration of Carbopol 934P. The formula I, formula II and formula III used Carbopol 934P 30%, 40% and 50% respectively. The prepared tablets were evaluated on their mucoadhesive and drug release characteristics. The dissolution test was performed using 900 ml of 0,1 N hydrochloric acid, at 37 ± 0,5°C and stirring speed of 50 ± 2 rpm.

The result showed that the % *swelling index,* it is a mucoadhesive characteristic is improving as the increasing of Carbopol 934P. The kinetic release of all the formulas (FI, FII and FIII) are dominated Higuchi's model and the release mechanism was dominated by matrix porous.

Key word : ranitidine HCl, mucoadhesive tablet, Carbopol 934P.