

PENGARUH PENAMBAHAN MANITOL TERHADAP MUTU FISIK TABLET DAN
PELEPASAN RANITIDIN HCl DARI SEDIAAN LEPAS LAMBAT

GASTORETENTIVE FLOATING TABLETS DENGAN Matriks HPMC K100M

HAFID FADILLAH AKBAR

Drs. H. Sugiyartono, Apt., MS.

KKB KK FF 250 11 Akb p

ABSTRACT

Ranitidine HCl is reversible competitive inhibitor for H₂ receptor activity which has a minimum activity on H₂ receptor activity. Ranitidine HCl is 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. A study to investigate the effect of mannitol on Ranitidine HCl release from sustained release floating tablets with HPMC K100M as a matrix was carried out. The tablets with various concentration of mannitol 10%, 15%, and 20% were prepared by wet granulation method. The tablets were evaluated for physical characteristics including hardness, friability value and in vitro release of drug and also floating characteristic. The amount of drug release from tablet into dissolution medium was assayed by spectrophotometer UV. Dissolution test were carried out by USP dissolution apparatus 2 in dissolution medium which is HCl 0,1N at temperature 37±0,5°C, the result is analyzed by statistics program of SPSS using one way analysis of variance in 95% confidence interval.

The result showed that the physical properties of tablet was different for each formula. The addition of mannitol gives the different hardness and friability for each formulas. The higher the concentration of mannitol added, the higher the hardness value is. The release profile showed that there is no difference of the amount of drug release. All formulas indicate the drug was released by anomalous transport (non-Fickian Diffusion) and all formulas are following by first order. This result indicates that the release of the tablet is dominated by diffusion and erosion mechanism.

Key word : ranitidine HCl, floating tablet, Hydroxypropyl methylcelluloce K100M, mannitol.