

ABSTRACT

The Effect of Ratio Hydroxypropyl Methylcellulose K4M and Hydroxypropyl Methylcellulose K100M towards Physical and Floating Characteristics from Ranitidine HCl Tablets

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The rationale of this research was to prepare a gastroretentive drug delivery system of ranitidine HCl. Floating drug delivery system used to target drug release in the stomach or to the upper part of the intestine. Currently, floating tablets are one of the important categories of drug delivery systems with gastric retentive behavior. Ranitidine is a H₂ blocker, absorbed from the upper part of gastrointestinal track, and metabolized in the colon that can degrade the drug, leading to a low bioavailability. 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.

Four different formulas of ranitidine HCl were prepared by wet granulation method using 25% of hydroxypropyl methylcellulose (HPMC) K4M and HPMC K100M. The ratio of hydroxypropyl methylcellulose K4M and hydroxypropyl methylcellulose K100M in F1, F2, F3, and F4 is 1:0, 1:2, 1:4, 1:6 respectively. The prepared tablets were evaluated on their physical and floating characteristics.

The results showed that the physical characteristic is improving as the increasing concentration of HPMC K100M in formula's ratio. Floating lag time, it is a floating characteristic is extended as the increasing concentration of HPMC K100M in formula's ratio. Entirely the formula floats for more than eight hours.

Keywords : ranitidine HCl, floating tablet, hydroxypropyl methylcellulose K4M, hydroxypropyl methylcellulose K100M.