ABSTRACT

Cimetidine is a histamine H_2-receptor antagonist that inhibits the production of acid in the stomach. It is largely used in the treatment of heartburn and peptic ulcers. In the present research work, cimetidine *in situ* gelling systems were prepared using gelrite in combination with HPMC E50LV. The formulations prepared were evaluated for several parameters like drug-polymer interaction, gelling time, clarity, pH measurement, drug content, *in vitro* drug release, viscosity, sterility and *in-vivo* studies.

The prepared formulations were in liquid state and exhibited low viscosity and by addition of simulated gastric fluid caused the solutions to transform into gel with high viscosity. Among the formulations, F4 was selected as the best formulation as it fulfilled all the criteria. The drug release of F4 extended upto 12 h period.

Two months of stability study were carried out at 40 ± 2°C / 75 ± 5 % RH for the best selected formulations. The results showed that there were no significant changes in all the parameters evaluated for all the formulations

Finally, based on the clarity and viscosity of the prepared formulation, F4was evaluated for anti-ulcer activity on Albino wistar rats. The results of the study showed that the scores scored were less than the marketed formulation of cimetidine and the control group indicating a better sustained anti ulcer therapy.

Keywords: Cimetidine; *In situ* gelling systems; Viscosity; Gelrite; H.P.M.C;Peptic ulcer.