FORMULATION DEVELOPEMENT AND CHARACTERIZATION OF CONTROLLED RELEASE TABLET OF HALOPERIDOL USING GEOMATRIX TECHNIQUE

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Abstract:

The aim of present study was to formulate, develop and Characterize the Geomatrix tablets containing Haloperidol in order to achieve zero order controlled drug release to reduce the dose dependent toxicity of Haloperidol and to have better patient compliance. The core tablet is prepared by using different grades of HPMC in different proportions and along with other excipients like Lactose monohydrate magnesium Stearate, PVP K30 by wet granulation technique. The granules for outer layer were prepared by using mixture of HPMC K4M and HPMC K100LV in different proportion and along with other excipients like lactose monohydrate and PVP K30 by wet granulation method. Core tablet is placed in between the outer layer granules and compressed to get geomatrix tablet. The granules were evaluated for their flow properties and the finished tablets were evaluated for their physical parameters and % Cumulative drug release. The drug release study of haloperidol were done by using USP-II paddle type dissolution apparatus. The release rate of Haloperidol was studied for 24 hours. The release rate of Haloperidol from all the formulations was more than 85% at 24 hours. In case of HPMC K4M and HPMC K100LV based tablets with the increasing of polymer concentration the release was decreased. Total 9 batches have been manufactured to optimize and develop a robust and stable formulation. The stability studies of the Geomatrix tablets were also comply with ICH guidelines.

Key words: Geomatrix tablet, Haloperidol, Controlled release, HPMC K4M, HPMC K100LV, PVP K-30, Lactose monohydrate, Wet granulation.