DEVELOPMENT AND EVALUATION OF GASTRO RETENTIVE CONTROLLEDRELEASE DOSAGE FORM OF CHLORDIAZEPOXIDE

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To

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Abstract:

Purpose: The aim of present study was to develop and evaluate gastro retentive controlled release dosage form of Chlordiazepoxide by using HydroxyPropylMethylCellulose K 4 M and Xanthum gum to avoid accumulation of metabolites of Chlordiazepoxide and to reduce dosing frequency. Hydrodynamically balanced system was evaluated for this purpose.

Method: Tablets were prepared successfully by wet granulation method by using PVP K 30 as binding agent and HPMC K4M, Xanthum gum as retarding polymer. Optimization of formulation was done by using 3^2 full factorial design where independent variables are X1 (concentration of HPMC K4M) and X2 (concentration of Xanthum gum).The prepare blend of tablet were evaluated for pre - compression parameters like bulk density, tapped density, carr's index, hausner' ratio and in vitro drug release, % swelling index and stability study.

Result: The prepared blend has good flow property and compressibility. Due to combination of HPMC K4M and Xanthum gum polymers tablets maintain its matrix integrity and show good prolonged release in controlled manner. Swelling index was in range from 33 to 75 %. *In vitro* drug release of tablet was carried in 0.1N HCL up to 18 hrs and its show 95-98 % drug release.

Conclusion: Use of Xanthum gum control the initial burst drug release effect of matrix tablet and HPMC is rapidly swelling hydrophilic polymer which form highly viscous gel barrier which control the drug release from system.

Keywords: Chlordiazepoxide, gastro retentive, hydrodynamically balanced drug delivery system, controlled release, HPMC k4M, Xanthum gum.