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Colon Specific Chronotherapeutic Drug Delivery for Nocturnal Asthma: Effect of Eudragit Enteric Coating on Matrix Tablets of Salbutamol Sulphate

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Abstract : Objective: The purpose of this study was to prepare Eudragit S-100 coated salbutamol sulphate matrix tablet for chronotherapeutic drug delivery system for the treatment of nocturnal asthma.

Methods and Material: This study is designed to analyze the effect of Eudragit S-100 coating on the drug release from hydroxypropyl methylcellulose matrix to achieve the time and pH dependent chronotherapeutic drug delivery system of salbutamol sulphate. Hydroxypropyl methylcellulose matrix tablets of salbutamol sulphate were prepared by wet granulation method and coated with Eudragit S-100 using dip coating method. Then the tablets were evaluated for different physical parameters, compatibility studies and *in vitro* dissolution.

Results: Matrix tablets of salbutamol sulphate have been characterized for weight variation, hardness, friability and drug content. HPMC matrix tablet failed to control the drug release in initial hrs. and shows 68 ± 0.71% of the drug release. Formulation FMS 5 (HPMC K-100) selected for coating with Eudragit S-100 as it shows significant drug content uniformity and consistent drug release. Eudragit S-100 coated formulations control the drug release in first hrs. at pH 1.2 and 6.8 and shows burst release at pH 7.4 after 7 hrs. This is due to pH dependent nature of eudragit polymer. Compatibility studies revealed that there was no interaction between drug and the polymers.

Conclusion: From observations mentioned in the results, it is obvious that the developed salbutamol sulphate enteric coated matrix tablets are suitable for chronotherapeutic drug delivery system.

Key words: Salbutamol Sulphate, HPMC, Eudragit, Matrix tablet, Chronotherapeutic.

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