



A Novel Bucco-Vaginal Controlled Release Drug Delivery System of Miconazole Nitrate for Candidiasis-Design and Evaluation.

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SUMMARY. A variety of approaches have been studied in the past to overcome the problems encountered with the delivery of antifungal, for effective treating of oral and vaginal candidiasis. In this study, a novel mucoadhesive tablets with pH-independent drug release characteristic was prepared by chitosan and carbopol® 71G interpolymer complex (IPC) claims for multipurpose use. Precipitation method is employed for preparation of IPC followed by characterization with Fourier transform infrared spectroscopy (FT-IR) and Differential scanning calorimeter (DSC). Bucco-Vaginal Miconazole nitrate (MN) compacts were prepared by direct compression using IPC. The formulations were tested for physicochemical properties, in vitro drug release (buccal and vaginal pH), swelling studies and mucoadhesion strength. The dissolution of MN from all the prepared tablets into the phosphate buffer (pH 6.8) and simulated vaginal fluid pH 4.2 (SVF) were controlled and followed non-fickian Release mechanism. Formulations containing IPC showed pH independent controlled Miconazole nitrate release without an initial burst release effect in both buccal and vaginal pH. Furthermore, F14 formulations showed satisfactory bioadhesive property and controlled release MN than all other formulations. However, the suitable combination of polymer with IPC exhibited the controlled release MN and satisfactory bioadhesive property with surface erosion along with swelling approached Zero-order release.

KEY WORDS: Candidiasis, Carbopol 71G, Chitosan, Interpolymer complex, Miconazole nitrate.

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