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Design and Development of Mucoadhesive Buccal Film Bearing Itraconazole

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Abstract : The purpose of this research was to develop and evaluate mucoadhesive films for buccal administration of itraconazole using film-forming and mucoashesive polymers. Buccal films of chitosan bearing Itraconazole were prepared by solvent casting technique. The films have been evaluated in terms of film weight, thickness, density, surface pH, FTIR, X-ray diffraction analysis, bioadhesion, swelling properties, and in vitro drug release studies. It was found that film formulations of 2 cm2 size having weight in the range of 204 ± 0.76 to 223 ± 2.09 mg and film thickness were in the range of 0.44 ± 0.11 to 0.57 ± 0.19 mm. Density of the films was found to be 0.102 to 0.126 g/ml. Drug content was found to be uniform in the range of 8.23 ± 0.07 to 8.73 ± 0.09 mg/cm2 for formulation A1 to A4. Maximum bioadhesion force was recorded for HPMC buccal films (A2) i.e. 0.57 ± 0.47 as compared to other films. In vitro residence time was in range of 1.7 ± 0.12 to 7.65 ± 0.15 h. The drug release studies show that formulations follow non-fickian diffusion. These mucoadhesive formulations could offer many advantages in comparison to traditional treatments.

Keywords : biovariability, buccal patches, itraconazole, Mucoadhesion
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