ABSTRACT

Mucoadhesive buccal tablets of Losartan Potassium using various suitable bioadhesive polymers such as Carbopol 934p, Hydroxy propyl methyl cellulose K4M, Sodium carboxy methyl cellulose and Hydroxy ethyl cellulose at different ratios (1:1, 1:2, and 1:3) were prepared. A backing layer of ethyl cellulose was used which is impermeable in nature. Nine different formulations of Losartan potassium were prepared by direct compression method. The prepared tablets were evaluated for weight variation, tablet thickness, drug content, swelling studies, % matrix erosion, surface pH, bioadhesive properties, *in-vitro* drug release and *in-vitro* drug diffusion. It was found that swelling index was proportional to CP and HPMC K4M content. As the HPMC K4M content increases the swelling index also increased. The surface pH of all formulations was found to be satisfactory, and values were in between the range of 5-7 pH, hence no irritation to buccal cavity is assumed. The drug release was dependent on the ratio of primary and secondary polymer. Tablets containing CP:HPMC K4M in the ratio 1:1 has shown maximum percentage of *in-vitro* drug release as well as *in-vitro* diffusion through buccal mucosa. The formulation F1 was considered as the optimized formulation based on good bioadhesive strength, *in-vitro* dissolution drug release of 89.21±0.49%, *in-vitro* drug diffusion of 84.16% for 7 h . The formulation F1 containing CP: HPMC K4M in the ratio 1:1 showed sustained release of drug for 7 h by achieving the desired therapeutic concentration.

Keywords: Mucoadhesive buccal tablet, Losartan Potassium, Hydroxy propyl methyl cellulose K4M, Sodium carboxy methyl cellulose and Hydroxy ethyl cellulose.