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Research on Formulation and Evaluation of Floating Microspheres

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Abstract: *The purpose of this study is to design and evaluate a floating multipart oral delivery system for diltiazem hydrochloride that can provide sustained release. The aim of the work is also to study various parameters that influence the behaviour of floating multiparticles in an oral dosage form. Floating microspheres were prepared by a non-aqueous emulsifying solvent evaporation technique using ethyl cellulose and Eudragit RS-100 asthe rate-controlling polymer. In vitro activity was evaluated using standard pharmacopoeia and other tests such as drug-polymer compatibility, (%)yield, particle size analysis, drug entrapment efficiency, surface topography, in vitro buoyancy and release studies. The results show that the mixing ratio of the components in the organic phase affected the size, size distribution (199-320 µm), drug concentration(59-84%), percent yield (57-77%) and drug. Liberation microsphere (45-99aftern12 hours) and swimming time > 12 hours. The best results were obtained in the ratio drug: polymer Eudragit RS-100 (1:3). Good in vitro floating behaviour was observed in most cases, and various drug release patterns could be achieved by varying the polymer ratio, which was optimized to match the target release profile. Stability studies showed no significant change in the drug content of the formulation even after 3months. The data obtained in this study therefore suggest a floating dose of micro particles*

Keywords: Floating Microspheres