

Gastroretentive Microballoons Of Olmesartan Medoxomil: Formulation And *In Vitro-In Vivo* Evaluation

Yadishma A. Gaude, Archana S.Patil, Sweta Aloshi

Department of Pharmaceutics, KLE College of Pharmacy, KLE Academy of Higher Education and Research Belagavi, Karnataka, India

Abstract:

The objective of the study was to develop a floating drug delivery (FDD) system incorporating Olmesartan medoxomil, designed to exhibit prolonged gastric retention, thereby enhancing bioavailability and ensuring sustained release of the pharmaceutical agent. Microballoons were formulated using the ionotropic gelation technique and subjected to assessment for physicochemical attributes, in vitro drug release, and in vivo studies. The micromeritic characteristics demonstrated favorable properties, while scanning electron microscopy affirmed their spherical morphology with a slightly uneven surface. Particle sizes ranged between 0.98mm and 0.909mm. The prepared microballoons exhibited buoyancy for over 12 hours, and their cumulative drug release percentage ranged from 83.91% to 69.70%. In vivo investigations revealed a notable reduction in systolic blood pressure (SBP) within the F6-treated group compared to the group treated with the pure drug, indicating an enhanced bioavailability of the drug. These formulated microballoons emerge as promising candidates for an oral gastroretentive controlled drug delivery system for Olmesartan medoxomil.

Keywords: Olmesartan medoxomil, HPMC K15M, Sodium alginate, Floating microballoons (hollow microspheres).