Formulation, Development and Characterization of Controlled Porosity Osmotic Pump Tablets of Losartan Potassium

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Abstract

An Osmotically controlled drug delivery system utilizes osmotic pressure for controlled delivery of active agents. It has gained wider acceptance due to drug release independent of pH and physiological condition of the GIT. Losartan Potassium a highly soluble drug has been used as a model drug and attempt has been made to control the release of drug by using Mannitol, Lactose, PEG 400 and Sorbitol. The core tablets were prepared by wet granulation technique and granules before compression were evaluated for micromeritic properties. The core tablets were coated with cellulose acetate as a semipermeable membrane, Sorbitol as a pore former and PEG 400 as a plasticizer to give good film properties. The effect of concentration of osmotic agent and % weight gain on in vitro release was studied and was found that drug release depend on both of these factors. All the formulations showed more than 80% of drug release till 12 hrs and drug release from optimized formulation was found to follow zero order kinetics. The formulation was also found to be stable in terms of hardness, drug content and drug release after stability study.

Key words: Losartan Potassium, Hypertension, Mannitol, Lactose, Sorbitol, Cellulose Acetate.