

Assessment of dissolution behavior of valsartan dual release mini matrix system using tablet in capsule technology

G.N.K. Ganesh

JSS College Of Pharmacy, India

In current research work, dual release mini-matrix minitabets were prepared for Valsartan drug. Immediate release minitabets were prepared using Avicel PH102 and superdisintegrant Croscarmellose. Sustained release minitabets were prepared using hydrophilic polymer HPMC K100M at 20% (F1+F), 30% (F2+F), 40% (F3+F) w/w. The minitabets prepared were 5mg in weight. The number of minitabets required for the dose of immediate release and sustained release were calculated and filled into a capsule size of 2. Evaluation studies were done namely weight variation, hardness test, disintegration and dissolution. The dissolution studies were performed using phosphate buffer pH6.8. The results showed that the release profile of formulation (F1+F) was 98.43% for 4hr; formulation (F2+F) was 98.03% for 6hr and formulation (F3+F) was 98.54% for 9hr. Release data modeling studies were performed and found formulation (F1+F) follows first order release; formulation (F2+F) follows Higuchi model release and formulation (F3+F) follows zero order release. To conclude, the dual release behavior was attained by combining immediate release and sustained release minitabets of the drug which can be filled into one capsule so that the delivery system can able to deliver a first impulse of the dose in the shortest time possible (a few min) and a second fraction of the dose for a prolonged time at a constant rate. This type of formulation can be used in conditions like hypertension so as to get quick plasma concentration followed by prolonged action as it is required.

Biography

G.N.K. Ganesh has completed his M.Pharm at the age of 24 years from Dr.M.G.R. Medical University, Chennai Tamilnadu and pursuing Doctoral Studies from JSS University Mysore, Karnataka, India. Presently Working as a Assistant Professor in Department of Pharmaceutics in JSS College of Pharmacy, Udhagamandalam. I have published more than 15 papers in reputed Journals.

ganesh_gnk@rediffmail.com