**ABSTRACT**

Sibutramine HCl is an orally administered agent for the treatment of obesity. It has short half life of 1.2 h and oral bioavailability of 77%. The purpose of this study is toformulate the microspheres containing Sibutramine HCl using ion exchange resin by coating with EC for achieving controlled release in small intestine. The microspheres was prepared by using solvent evaporation method. The F1 formulation was chosen as the best formulation among all formulations. The effect of various formulation parameters on the characteristics of the microspheres like %DEE, polymer coating, particle size, percentage yield, SEM was studied. The drug release from microspheres was for prolonged periods of time till 8 h. The release was found to be 75%. The drug release from microencapsulated resinate followed diffusion-controlled model in accordance with first order kinetics. The prepared formulations were further subjected to stability studies under different temperature and humid conditions for 30 and 60 days according to ICH guidelines. There was very negligible difference observed in Percentage Drug Entrapment Effeciency studies. Thus, drug resinate complex coated with ethyl cellulose has proved to be an efficient carrier for controlled release oral drug delivery of Sibutramine HCl.

**Keywords** :- Microencapsulation, Ion-exchange resin, Controlled release, Solvent evaporation, Sibutramine HCl, Tulsion 412, Ethyl cellulose.