CHAPTER 1: AIM AND OBJECTIVES OF RESEARCH STUDY

Hypertension is the cardiovascular disorder follow circadian rhythm. It has been reported that more shocks and heart attacks occur during morning hours. The level of cortisol is higher in the morning hours, and its release is reported to decline gradually during the day. Blood pressure is also reported to be high in the morning till late afternoon, and then drops off during night. Capillary resistance and vascular reactivity are higher in the morning and decreases latter in the day. So, aim of the present study is to prepare colon targeted time release pulsatile type press coated tablet of atenolol which provide maximum drug concentration at early morning, with following objectives:

1) To prepare and optimize the atenolol core tablet for preparation of press coated tablet
2) Preparation of colon targeted time release pulsatile type press coated tablet of atenolol using time dependent approach, pH dependent approach and microbially triggered approach
3) Selection of formulation ingredients for preparation of atenolol press coated tablets for each approach and performed the drug-excipient incompatibility study.
4) Estimation of atenolol in different media using UV visible spectrophotometric method and construction of calibration curves.
5) Evaluation of prepared formulations for flow properties study, post compression parameters and in vitro dissolution study.
6) Optimization of formulations of atenolol press coated tablets using factorial design.
7) Optimized formulation of each approach should be subjected to stability study as per ICH guidelines at 40 ± 2°C and 75 ± 5 % RH.