9. CONCLUSIONS

Colon-specific tablet formulations for chronotherapeutic delivery of Theophylline and Diclofenac sodium have been proposed in this study. Okra gum was applied as matrixing agent for Theophylline formulation as well as compression coat over fast disintegrating core tablets of Diclofenac sodium. When these formulations were subjected to in vitro drug release study, matrix tablets of Theophylline (OG27) prepared by wet granulation method using 3.5% PVPK30 containing 400mg okra gum showed 12.21% drug release in 5h in upper GIT. However, the compression coated tablets of Diclofenac sodium (CC28) prepared by direct compression method containing 500mg okra gum showed 3.11% drug release in 5h in upper GIT. The prepared formulations when studied in presence of rat caecal content in dissolution medium, as increase in the amount of drug released was observed by action of bacterial enzymes present in rat caecal content. In vivo pharmacokinetic study for above said formulations (OG27 and CC28) showed minimum drug absorption in upper GIT with abrupt drug absorption as tablet formulation reaches lower part of GIT (colon). The insignificant changes in the physicochemical properties of tablet formulations (OG27 and CC28) after storage at 40°C/75% RH for 6 months indicate that the formulation could have a minimum shelf life of 2 years. Based on the encouraging results, the prepared tablet formulations of Theophylline and Diclofenac sodium can be considered suitable dosage form for chronotherapeutic treatment of diseases like asthma and rheumatoid arthritis, respectively and thereby accompanying some of the benefits like reduction in total dose, frequency of administration, dose related side effects and better patient compliance. Thus, novel formulation concept of colon specific matrices of Theophylline and Diclofenac sodium using okra gum may help to provide proper platform and promising potential in the field of pharmacy.