CHAPTER 9

Conclusions
Conclusion

Overall from the present study carried out on metoprolol succinate and carvedilol buccal patches prepared from variable amount of chitosan, NaCMC and PVA, the following points can be concluded.

The buccal patches prepared using chitosan; NaCMC and PVA were found to have good physical characteristics. The mean thickness and weight of buccal polymeric patches increased with an increase in the amount of polymer percent. As the concentration of the polymer increases the weight of the patches also increases. The surface pH of the patches was almost neutral so that no irritation was observed after application on mucosa. The elasticity of the patches was measured by folding endurance and found that the value was more than 300 indicated good elastic behaviour of the patches. As the time of swelling increase the value of % swelling increases but as the concentration of the polymer increase the value of % swelling decreases. Residence time property was polymer dependent because as the concentration of the polymer increase the residence time was also increases. The mechanical properties of the patch were determined by tensile strength and elongation at break. The value of TS increases, and the value of E/B decreases, with increase in the concentration of polymer. Permeation of drug through porcine buccal mucosa was determined for 8 hrs and found that the MS permeated 91% and CR permeated 82% in 8 hrs. The release study of patches containing MS shows that the maximum release was found from CM-2, SM-3 and PM-2 patches, and in case of patches containing CR maximum release was from CC-2, SC-3 and PC-2 patches. For MS patches the release of the drug from the patches was by a diffusion dominated. For CR patches the release of the drug from the patches was also diffusion dominated.

In the present study both MS and CR patches showed significantly greater inhibitory effect on isoprenaline induced tachycardia.

On the bases of stability studies we found that no any changes in physical appearance, no any major difference in residence time of patches. The release of drug from the patches was slightly decreases and the decrease in release during storage may be a direct consequence of the reduced erosion rate of the patches.

So lastly we conclude that, buccal patches of chitosan, NaCMC and PVA containing MS and CR meet the ideal requirement for buccal devices.