

## CHAPTER V

### CONCLUSION

Lidocaine mucoadhesive patches could be prepared in both base and hydrochloride form. They are soft, thin, flexible and can be adhered to the intraoral mucosa, able to be placed and to release the drug steadily for reasonable length of time and thus improve patient compliance. This investigation would be concluded the following

1. The preparation process the mucoadhesive patches was simple because all the materials and equipment were common and widely used in pharmaceutical preparations.
2. The obtained patches consist of 3 layers: backing layer, drug matrix layer, and mucoadhesive layer by using ethyl cellulose, HPMC E15 and carbopol 934P respectively.
3. The mucoadhesive property of lidocaine base patches and the Dentipatch<sup>®</sup> were not significantly different. Both of them had more detachment force than the lidocaine HCl patches.
4. The surface topography showed that lidocaine HCl patch had the smooth surface with homogeneous matrix layer while the others had some fine dispersion particles of drug in the matrix film.
5. The release rate without dialysis membrane of lidocaine HCl was significantly faster than lidocaine base patch and Dentipatch<sup>®</sup> ( $p < 0.05$ ), while those of lidocaine base patch and Dentipatch<sup>®</sup> were no significantly different from each other ( $p > 0.05$ ).
6. Comparison by using one-way ANOVA, lidocaine HCl patch exhibited significantly higher percent of moisture sorption and swelling than lidocaine base patch and Dentipatch<sup>®</sup>.
7. Lidocaine base patch and Dentipatch<sup>®</sup> were in solid dispersion form while lidocaine HCl patch was in amorphos form.
8. The drug release kinetic from the obtained patches through dialysis membrane and without dialysis membrane were the best fitted with first order kinetic. However, the

release rate through dialysis membrane was slower than that without dialysis membrane. The release rate without dialysis membrane, lidocaine HCl was significantly released from the formulation faster than lidocaine base patch and Dentipatch<sup>®</sup> ( $p < 0.05$ ) while those of lidocaine base patch and Dentipatch<sup>®</sup> were not significantly different ( $p > 0.05$ ).

9. The obtained patches were not stable even within the self-prepared packaging therefor protection from moisture and high temperature had to be considered.



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