

# **Formulation and Evaluation of Mebeverine Hydrochloride as a Local Anesthetic for Oral and Dental Use**

A Thesis Submitted By

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## **Abstract**

### **Formulation and Evaluation of Mebeverine HCl as a Local Anesthetic for Oral and Dental Use**

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Mebeverine hydrochloride, a musculotropic spasmolytic agent on GIT smooth muscles, was reported to have a local anesthetic effect. Thus, it was desired to formulate mebeverine HCl into suitable topical preparations that could be used in the field of dentistry. Mebeverine HCl was formulated into a gel and film-forming gel preparations that could be used locally in the treatment of different oral painful conditions. Poloxamer P-407 and different cellulose polymers were used as bases for these preparations. Moreover, different additives that enhance the release and increase the residence time were used in the formulation of these preparations. The preparations were in vitro evaluated in terms of release, mucoadhesion and rheology. Formulations selected for clinical evaluation were chosen on the basis of a compromise between a quite fast release profile, a good mucoadhesive behavior and an acceptable rheology. Clinical assessment of these preparations was performed as well through a questionnaire sheet in order to judge the efficacy and the organoleptic characters of these preparations in comparison to other market products. Also, the safety of these preparations were evaluated through histopathological examination of rat buccal mucosa by observing any changes in the mucosa after application and counting inflammatory cells.

**Key words:** Mebeverine HCl, Local anesthetic, Gel, Film-forming gel, Mucoadhesion, Rheology, Clinical and Histopathological evaluation.

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