

DESIGN, CHARACTERIZATION AND EVALUATION OF NOVEL MUCOADHESIVE NASAL INSERTS FOR THE TREATMENT OF MIGRAINE

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ABSTRACT

Recently, nasal administration has gained more attention as a safe way for delivering the active ingredients used to treat migraines. Strategies can be implemented by changing aspects like the medicines, delivery vehicle, and other components to get around the obstacles associated with conventional therapies. This research work aimed to explore the potential of lyophilized nasal inserts of eletriptan hydrobromide for the treatment of migraine attack. Here, the lyophilization technique is used for the nasal inserts preparation. The developed inserts were tested for various characterization studies, such as mucoadhesive examinations, water uptake, *in vitro* drug release, *in vitro* cytotoxicity, *ex vivo* investigations and stability. The inserts showed acceptable pH values, satisfactory mucoadhesion potential and excellent water uptake activity. *In vitro* release data for the formulations followed first-order kinetics. The cytotoxicity studies showed that there was a reduction in cell toxicity of drug embedded in the inserts when compared to the pure drug. When the prepared nasal inserts were used for treatment, there was no significant impact on the epithelium of nasal mucosa. The novel lyophilized nasal inserts of eletriptan hydrobromide could be a better alternative for the treatment of migraine.