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Preparation and Evaluation of Bioadhesive Inserts Containing Verapamil Hydrochloride for Nasal Delivery

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***SUMMARY*. Verapamil HCl is an antihypertensive agent which have a low oral bioavailability (20-35%) due to its high first pass metabolism. The objective of the present study is to develop a verapamil HCl nasal insert of which would enable to improve the bioavailability and prolonged release of drug. As a result of textural analyses, sodium alginate gel was chosen to fabricate nasal inserts. *In vitro* drug release studies performed on Franz-diffusion cell showed that nasal insert gave prolonged drug release which was fitted to Higuchi kinetic model. PEG 400 was used as a penetration enhancer in formulation to increase the release of drug from insert. *Ex vivo* permeation studies with excised bovine nasal mucosa were carried out on inserts (with or without PEG 400). *Ex vivo* studies showed that PEG 400 increased the release of verapamil significantly. As a result, nasal inserts may be an alternative of oral route.**

KEY WORDS: Insert, Mucoadhesion, Nasal delivery, Verapamil HCl.

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