Development of sustained release in situ nasal gel of ondansetran HCl using mucoadhesive polymers
Jagadeesh R, P Ashok Kumar*, K Manjunath, Mancy S P
Email: ashokkumarscp@gmail.com

Abstract

In situ gel dosage forms are solutions after administration undergoes gelation to form a gel. The objective of the current study is to develop, characterize and evaluate nasal in situ gel containing anti-emetic drug of OND-HCl® by a temperature induced method. In this method, Lutrol F-127®, is used as a thermos-reversible polymer, PVP K30®, HPMC K4M® and PEG 6000® as mucoadhesive polymers. The tests for gel formation, pH, viscosity, in vitro drug diffusion, drug content, gelation temperature, gelation time and mucoadhesive force were conducted for the developed formulations. The percentage drug content and pH of all the formulations were found to be in the range of 95% - 99% and 4.9-5.2, respectively. Considering the in vitro drug diffusion studies formulation, F7 was optimized. It is an effective formulation exhibiting a sustained drug diffusion of 93.98% for eight hours with viscosity 30 and 20 cps. From the results it is concluded that OND-HCl® nasal in situ gel produces a prolonged drug delivery for the treatment of chemotherapy induced nausea and vomiting.

Key words: In Vitro Drug Diffusion, FTIR, Nasal In Situ Gel, Ondansetron HCl

Jagadeesh R, P Ashok Kumar, K Manjunath, Mancy S P
Department of Pharmaceutics, Sree Siddaganga College of Pharmacy, B H Road, Tumkur, Karnataka
* Corresponding Author

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