

Title: Pharmacokinetic study of anti-histaminic activity of formulated nano-gel /emulgel and conventional intranasal drug delivery of Diphenhydramine HCl by HPLC method

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Abstract

Clinical studies have demonstrated the influence on pharmacokinetics by circadian pattern of certain therapeutically active drugs. The bioavailability of drugs is time-dependent, depending on dose administration. Diphenhydramine was chosen as model drug due to its lipohilicity, low molecular weight and good bioavailability.This study was aimed to investigate pharmacokinetic parameter's differences between formulated Nano-gel, Nano-emulgel and existing conventional spray (as reference) for intranasal drug delivery of Diphenhydramine in healthy as well as allergenic rabbit model by HPLC method.10mg of each dosage form was administered intranasally to six groups (3 for each study) of white male Newzeland rabbits (n=6), following cross-over design pattern and plasma concentration was determined by HPLC method. Pharmacokinetic parameters of each dosage form in all groups were calculated by using plasma concentration-time data through PK Solver Microsoft Excel 2013. To determine the statistical significant difference at model ($p<0.05$) in all groups of healthy as well allergenic rabbits, completely randomized design (CRD) and one-way ANOVA was applied.The fluctuations in plasma concentration vs time plots, indicating the physiological environment have influence on drug absorption through target sites.The maximum plasma drug concentration (Cmax) and time reach to peak plasma concentration (Tmax) were almost same in DPH nano-gel and nano-emulgel intranasal delivery and comparatively high to conventional DPH nasal spray, indicating the promising way for sustained intranasal drug delivery.

Biography

Dr. Hina Javed has completed her Doctor of pharmacy in 2008 and Mphil (Pharmaceutics) (2011-2013) from Bahauddin Zakariya University, Multan, Pakistan. Now she is doing her PhD (Pharmaceutics) (2015-2020) from Bahauddin Zakariya University, Multan, Pakistan. She is working as assistant professor of Pharmaceutics at Department of pharmacy, Southern Punjab institute of health sciences, Multan, Pakistan. She has also assisted 32 Mphil students from 2014-till now. She has published 5 papers in reputed journals.

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