doi:10.4172/0975-0851.1000018

TITLE

BIOAVAILABILITY ENHANCEMENT OF ROPINIROLE BY USING NANOEMULSION BASED SYSTEM

Dr Sushama Talegaonkar

Department of Pharmaceutics,
Faculty of Pharmacy, Jamia Hamdard,
New Delhi-110062, India

Nanoemulsions are isotropic, thermodynamically stable transparent (or translucent) systems of oil, water, and surfactants with a droplet size usually in the range of 10–100 nm. Their long-term stability, ease of preparation (spontaneous emulsification), high solubilization of drug molecules and permeation enhancing properties make them promising as a drug delivery tool. Due to their unique physicochemical properties, nanoemulsion offer compelling advantages over conventional transdermal drug delivery formulations.

Ropinirole is a recently introduced dopamine agonist for the treatment of Parkinson disease. The usual dose is 3-9 mg daily and has to be taken in three divided doses. This causes great inconvenience to the patients. When symptoms like slowness of movement, tremor and rigidity return due to wearing off of the patient's medication, it can be problematic, causing difficulty with simple activities and movement in Parkinson patients. It was envisaged that the limitations of the conventional oral ropinirole therapy might be addressed by transdermal administration. Ropinirole has a low molecular weight (MW 260), low bioavailability (50%), is sufficiently lipophilic (Log P= 3.32), and has a short elimination half-life (6 h) which makes it a suitable candidate for transdermal delivery. In the present study, it was therefore intended to investigate the potential of novel nanoemulsion formulations for the transdermal delivery of ropinirole.