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Mishra DK, Kumar A, Raj R, Chaturvedi A. Capmul MCM based nanoemulsion for intranasal delivery of an antidepressant. *Bull. Pharm. Res.* 2013;3(1):34-9.

Abstract: The rationale of this study acquaint with improvement of sertraline hydrochloride (STH) solubility, formulation of STH nanoemulsion (NE) for intranasal delivery to achieve rapid onset of action and to omit first pass effect with enhanced bioavailability. STH nanoemulsion (NE) system was formulated consisting of capmul MCM as oil phase, tween 80 as surfactant and propylene glycol as co-surfactant. The developed system was characterized for phase behaviour and solubilization capacity and water titration method was utilized for the preparation of STH nanoemulsions (SNEs). All formulations were evaluated for globule size, drug content, nasal ciliotoxicity, pH and viscosity. A high STH solubility of 94.28 mg/ml was observed with the NE system containing 20.0% capmul MCM, 33.3% surfactant/co-surfactant (Labrasol:Transcutol P at 2:1) and 46.7% water. *In vitro* diffusion studies for nasal absorption explanation were executed on goat nasal mucosa. *In vitro* nasal absorption through goat nasal mucosa was found to be 62.85±0.56%. These results suggested that intranasal delivery of STH may be beneficial over the available oral delivery for the treatment of depression.

Key words: Sertraline hydrochloride, First-pass effect, Solubilization, Intranasal, Depression.

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