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FORMULATION AND EVALUATION OF RASAGYLINE MESYLATE TRANSDERMAL PATCH BY USING STATISTICAL OPTIMIZATION

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ABSTRACT:

Transdermal drug delivery system (TDDS) is defined as self contained, discrete dosage forms which, when applied to intact skin, deliver the drug, through the skin, at a controlled rate to systemic circulation. "Transdermal patch is a medicated adhesive patch that is placed on the skin to deliver a specific dose of medication through the skin and into the bloodstream. The aim of the present study is to design, develop and evaluate transdermal patches of Rasagiline mesylate by using central composite design; so as to bypass its first pass metabolism. Rasagiline mesylate is potent monoamine oxidase-β inhibitor and antiparkinsonian drug. There was no interaction between drug and excipients as revealed by an IR spectra and calibration curve of the pure drug, and placebo formulation. Patches of different ratios were prepared by solvent evaporation technique (SE) by using ethyl cellulose (X1) as a polymer. Dibutyl phthalate (X2) was used as plasticizer, methanol as a solvent & Sonication (X3) maintained for different period of time. These factors were selected as independent variables while thickness, folding endurance and drug content were selected as dependent variables. Furthermore, an optimal batch was selected from ten formulations by using central composite design and evaluated for weight variation, flatness, tensile strength, skin irritation study, surface pH, swelling index, water vapour transmission, moisture content study, scanning electron microscopy etc. To conclude, SE technique is a promising strategy in improving dissolution of poorly water soluble Rasagiline mesylate.

KEY WORDS: Transdermal Drug Delivery, Patch, Rasagiline mesylate.

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