PREPARATION AND EVALUATION OF VENLAFAXINE HYDROCHLORIDE TRANSDERMAL PATCH USING NATURAL POLYMERS

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ABSTRACT

The aim of the present investigation was to prepare and evaluate Venlafaxine hydrochloride transdermal patch using natural polymers to provide sustained release of the drug and to overcome the drawbacks associated with the conventional dosage forms such as frequency of dosing, poor bioavailability, GIT irritation, GIT degradation, first pass metabolism, nausea, vomiting, metallic taste, poor patient compliance. Transdermal patch containing Venlafaxine hydrochloride was prepared by solvent casting technique. FTIR study was carried out to assess any interaction between the drug and the polymers. The formulated Venlafaxine HCL transdermal patches were evaluated for different parameters like thickness, weight variation, drug content, percentage moisture loss, percentage moisture uptake, folding endurance, surface pH and tensile strength. Ex-vivo diffusion was determined by Franz diffusion cell. The transdermal patch was tested for their potential to cause skin irritation in rats. The optimized formulation batch F9 was having excellent tensile strength, folding endurance and maximum drug release, also it followed Korsmeyer-peppas kinetic model. The stability study was performed in accelerated conditions (40±2 ºC and 75±5 %RH) and in room storage conditions (30±2 ºC and 65±5 %RH) for optimized batch. At room temperature there was no problem of stability and transdermal patch remained stable for one month during the course of stability study. From all the obtained results it may be concluded that the optimized formulation batch F9 is most suitable for transdermal drug delivery of Venlafaxine HCL.

Keywords: Venlafaxine hydrochloride, Transdermal patch, Natural polymers, Solvent casting method, Sustained release.