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Preparation, characterization and evaluation of novel vesicular carriers of gel containing ethosomes entrapped with Finasteride

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The present investigation is to develop ethosomes loaded with finasteride, which was incorporated within a gel for transdermal delivery for systemic effect in order to avoid side effects and minimize frequency of administration by showing sustained release. Finasteride is an anti-androgen and steroidal anti-inflammatory drug which is used in the treatment of androgenic alopecia and benign prostatic hyperplasia. The ethosomal formulations were developed using different concentrations of ethanol (20-50%) and soya lecithin (1-5%). Further selected formulation was subjected to sonicaction to verify the effect on characterization. Photomicrographs revealed that all the ethosomal vesicles were spherical in shape and uniform size. It was also observed that as the concentration of ethanol was increased the entrapment efficiency decreased.

In-vitro release studies of formulation containing 30% ethanol and 3% soya lecithin showed highest percentage drug release (82.66%). Release kinetics of the optimized formulation showed first order kinetics followed by Higuchi mechanism further followed by Korsmeyer-Peppas mechanism. Present investigation revealed that enhanced release kinetics of finasteride was achieved in ethosomal formulation. Ethosomal gel containing drug showed prolonged, predictable release kinetics and is certainly useful for treatment of androgenic alopecia and benign prostatic hyperplasia by transdermal route.

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