

PREPARATION AND EVALUATION OF ECONAZOLE NITRATE CONTAINING FILM- FORMING GEL

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Abstract

Objective- The aim of present study is to develop a film-forming gel (FIFOGE) formulation of Econazole nitrate with hydroxy propyl methyl cellulose (HPMC) as a gelling agent, Eudragit RS PO as a film forming polymer and Triethyl citrate as a plasticizer. *Tenia pedis* is fungal infection of skin occurs in athlete's foot. Econazole nitrate is broad spectrum antifungal drug used in treatment of *tenia pedis* having high resistance towards fungal infection. For the treatment of fungal infection of skin, antifungal drug requires to be present for longer duration of action in contact with the skin. Therefore, the formulation having prolonged drug release is required. *Method-* Film-forming gel forms a thin, transparent film like layer on the skin and provides a prolonged release of Econazole nitrate. So, such formulation reduces duration of therapy and improves patient's compliance. To optimize this formulation, we applied the Response Surface Analysis technique and evaluated it. In the chosen design (Box-Behnken statistical screening design), 3 factors were evaluated, each at 3 levels and all 13 possible combinations were performed in the experimental trials. The Drug concentration, Eudragit RS (PO) and concentration of Triethyl citrate were chosen as independent variables. Drug content was selected as dependent variables. *Result-* The optimized film-forming gel obtained was formulated and evaluated for all parameters.

Conclusion- Optimized formulation showed % Drug diffusion 98.19 at 12 hour.

KEYWORDS: Film-forming gel (FIFOGE), Econazole nitrate, Eudragit RS PO, *Tenia pedis*.

INTRODUCTION

In topical drug delivery systems, the main benefit is to bypass first-pass metabolism. The other advantages of topical formulations are avoidance of risk and difficulty caused by intravenous treatment and various drug absorption conditions such as changes in pH, enzymes presence, and gastric emptying time. This method of delivery of medicine applies a wide variety of preparations to their healthy or diseased skin, both dermatological and cosmetic. Dermatological preparations range from liquid to powder in formulation, but most approved products are semi-