OBJECTIVE OF THE PRESENT WORK

A fungal infection caused by type of fungus called, a dermatophyte that infects the top layer of the skin, hair or nails. The mainstay of management of fungal infection and dermatophytes associated with skin and nail injuries has been oral and topical antifungal drug delivery systems. Most fungal disorder is relatively benign but can become life threatening in immunodeficiency or malnourished population. Fungal disease is ubiquitous in the world and antifungal medication account for sales of more than US$ 1 billion annually.

Patients having mild to severe manifestations of cutaneous candidiasis treated with combined nystatin and triamcinolone acetonide show a faster and more pronounced clearing of erythema and pruritus than patients treated with Nystatin or Triamcinolone acetonide alone. The delivery of drugs through most commonly used topical conventional preparations like Mytrex, Mykace limits the effectiveness of actives due to barrier properties i.e. epidermis of the skin which hinder the drug deposition. Thus selection of proper carriers extremely important by considering the view in the mind that they should increase drug deposition through topical formulations.

Nystatin is a polyene antifungal medication to which many molds and yeast infections are sensitive, including Candida. It is broad spectrum antibiotic active against *candida albicans* which is obtained from *streptomyses naursei*. Furthermore fungal infection is associated with inflammation hence combined therapy of antifungal and anti-inflammatory such as Triamcinolone acetonide is prescribed for the effective treatment. The molecular weight of Nystatin is 926.13 and it is highly lipophilic. As per BCS classification it is Class-IV drug which has low permeability and low solubility. Due to its toxicity profile it cannot be formulated into injectable formulations.

Niosome may serve as solubilization matrix, as a local depot for sustained release of dermally active compound. This vesicle has been reported to decrease side effects, give sustained release and enhance penetration of the trapped substance through the skin. Niosome modulate drug transfer through skin by adsorption and fusion of niosome on the surface of skin. The high thermodynamic activity gradient of the drug at the interface acts as a driving force for permeation of lipophillic drug by reducing barrier properties of stratum corneum, thereby niosomes act as a penetration enhancer.
Hence objective of present work is to develop niosomal delivery system for fungal infection and to develop niogel to improve topical applicability of niosomal dispersion so as to localize drug at site of action.