



## EFFICACY OF 30% SALICYLIC ACID PEEL AS AN ADJUVANT THERAPY FOR TREATMENT OF SUPERFICIAL DERMATOPHYTOSES

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### ABSTRACT

**Introduction:** The various forms of tinea are commonly occurring superficial dermatophytoses, treated with antifungals, both systemic as well as topical. Salicylic acid commonly used as a keratolytic agent but its efficacy in treating superficial fungal infections has not been studied. **Aim:** this study was aimed at evaluating the efficacy of 30% salicylic acid peel for adjunctive treatment of tinea faciei, barbae, corporis, manuum and pedis.

**Materials and methods:** 19 patients aged 15-45, with clinical evident forms of tinea were treated using 30% salicylic acid peel on the first visit. Oral itraconazole and topical terbinafine were given for 2 weeks. Mycological examination and clinical photography were done on day 0 and day 15.

**Results:** marked clinical improvement seen in all patients at 2 weeks. 9 patients had no mycological evidence of fungal elements at follow up at day 15.

**Conclusion:** 30% salicylic acid has keratolytic and anti inflammatory properties which may potentiate the action of antifungals in tinea, thus helping in prevention of drug resistance and promoting faster resolution of superficial dermatophytoses

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### INTRODUCTION

Tinea infections are superficial fungal infections caused by three species of fungi collectively known as dermatophytes that affect different anatomical sites and accordingly named as tinea corporis, tinea cruris (groin), tinea faciei(face), tinea barbae(bearded area), tinea unguium (nails), tinea manuum (hands) and tinea pedis (feet). Diagnosis is usually based on history and clinical appearance plus direct microscopy of a potassium hydroxide preparation. Culture or histologic examination is rarely required for diagnosis. Treatment requires attention to exacerbating factors such as skin moisture and choosing an appropriate antifungal agent. Topical therapy is generally successful unless the infection covers an extensive area or is resistant to initial therapy, in which case, systemic therapy is required. There is a newly emerging issue of resistance in dermatophytoses to anti-fungals, hence necessitating the use of other adjuvant treatment modalities.

Chemical peeling is the application of a chemical agent to the skin which causes controlled destruction of a part or entire epidermis, with or without the dermis, leading to exfoliation and removal of superficial lesions followed by the regeneration of new epidermal and dermal tissues.<sup>1</sup>

Salicylates denature proteins and are used to solubilize many proteins including glycoproteins;<sup>2</sup> this suggests a possible mechanism for desquamation. Salicylates may solubilize cell surface proteins which keep the stratum corneum intact. The exact mechanism for desquamation is still not completely clarified. Salicylic acid is used predominantly for its "keratolytic" effect, i.e. its ability to desquamate stratum corneum. Epidermal proliferation is also decreased.<sup>3</sup>

The present study was aimed at evaluating the efficacy of 30% salicylic acid peel in the treatment of tinea infections.

### MATERIAL AND METHODS

This descriptive study was done on a total of 19 cases of 15 to 45 years of age, with clinically diagnosed tinea infections-corporis, faciei, barbae, manum and pedis. Pregnant and lactating women and also those who had previously been treated were excluded from the study. An informed consent was obtained from the subjects. Ethical clearance was obtained from the Institute Ethics Committee. Before initiation of therapy, the lesions were subjected to mycological examination with potassium hydroxide mounting to confirm the diagnosis. The lesions were cleaned with normal saline and povidone iodine solution. Salicylic acid peel (30%) in polyethylene glycol vehicle (pH- 1.5), was applied over the lesions. When frosting became evident following application, the lesions were wiped clean with normal saline and then left to air dry. Topical 1% terbinafine hydrochloride cream was

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applied following peeling, which was also prescribed for application by the patient, along with itraconazole 100 mg capsules PO, both twice a day for 2 weeks. Clinical photographs were taken both before and after the chemical peeling procedure, on day 1 and day 15 respectively.

## RESULTS

Of the 19 patients, 14 were males and 5 were females aged 15 to 45 years. 12 patients followed up at 2 weeks whereas 7 patients were lost to follow up. All the patients who followed up at 2 weeks post initiation of therapy, reported complete resolution of pruritus associated with the lesion. Clinically, the lesions appeared to have significantly resolved with reduction in hyperpigmentation and size of the lesions, as evident from the pictures (figures 1, 2, 3).



Fig 1a, 2a, & 3a depict lesions of tinea over the Face, Chest, dorsum of Hand prior to chemical peeling.

Fig 1b, 2b, & 3b depict photographs taken on follow up after 2 weeks following treatment with 30% Salicylic Acid Peel; significant clearance of lesions can be noted.

## DISCUSSION

Chemical peeling using salicylic acid has been used for its anti comedolytic effect for successful treatment of acne.<sup>4</sup> It is mainly used as a keratolytic agent. It is thought to function through solubilization of intercellular cement, thereby reducing corneocyte adhesion. Salicylic acid causes denaturation of proteins and exfoliation of the stratum corneum. Thereby it facilitates penetration of topical anti-fungals, thus, aiding in clearance of dermatophytes.

## CONCLUSION

Salicylic acid peels can be used successfully as an adjuvant for the treatment of tinea infections, and aid in the action of anti-mycotic agents.

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