INFECTIOUS DISEASES (BACTERIAL, FUNGAL, VIRAL, PARASITIC, INFESTATIONS)

SKIN BARRIER FUNCTION DEFECT- A MARKER FOR RECALCITRANT TINEA INFECTION.

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Introduction: Tinea cruris, a cutaneous dermatophytic infection has seen an upsurge in recalcitrance in recent years. Factors implicated could be barrier defects, local factors, virulence of the infecting strain, host fungal immune response and clinical type of dermatophysis. Transepidermal water loss (TEWL) is a good marker of skin barrier function.

Objective: To assess whether TEWL affects the cure rate and relapse in patients of tinea cruris.

Material and Methods: We conducted a hospital based prospective comparative study. 100 patients of Tinea cruris with abnormal TEWL were compared with age and sex matched 100 patients of tinea cruris with Normal TEWL assessed in the right groin area. TEWL was calculated using Tewameter TM300 probe of Courage and Khazaka, Cologne, Germany. Cure rate was assessed by clinical and mycological examination after treatment with oral itraconazole 100 mg twice daily for 1 month. The cured patients were further followed-up at 3 months for recurrence and the results were compared between the two groups. Chi-square was done for patients >100 and Fisher's exact test was done for patients <100.

Results: Cure rate was 28% in patients with abnormal TEWL while it was 69% in controls with normal TEWL. Using chi square test highly significant difference was obtained ($\chi 2$= 32.029%, $p<0.001$). Relapse rate was 78.57% in patients with abnormal TEWL as compared to 21.74% in patients with normal TEWL. Fisher's exact test revealed highly statistical difference in the relapse rate between the two groups ($p<0.001$).

Conclusion: The present study concludes that tinea cruris patients with abnormal TEWL have significantly poor cure rate and significantly higher recurrence rate as compared to patients with normal TEWL. We believe that an invasive dermatophyte strain or a strain resistant to antifungal drugs maybe causing skin barrier dysfunction or a primary skin barrier dysfunction maybe secondarily causing fungal recalcitrance.