AETIOLOGICAL AGENTS OF HUMAN DERMATOPHYTOSIS

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The worldwide incidence of dermatophytosis is increasing and it continues to spread. Dermatophytosis is caused by fungi of genera *Trichophyton*, *Epidermophyton* and *Microsporum* on human skin, hair, and nails. No recent prospective studies have been conducted in Sri Lanka.

The fungal aetiology of dermatophytosis and the sensitivities of direct microscopy with 30% KOH and contrasting stain (CSB) were evaluated.

Between August 2011 to October 2011, 101 samples including skin, hair and nails were obtained from patients with clinically suspected dermatophytosis, who attended to dermatology clinic at General Hospital Kandy and Kandy Channeling Centre after obtaining the consent.

Direct smear for fungal hyphae was performed with 30 % KOH and followed by contrasting stain Chicago Sky Blue (CSB). All negative slides of CSB were observed for fungal filaments on the following day. All samples were inoculated on Sabouraud's dextrose agar and observed twice weekly for two weeks for growth of dermatophytes. Fungal growths were identified with tease mounting and alternative slide culture technique.

The study revealed 47% were direct smear positive for fungal filaments. Among them after 30 minutes of examination 42 cases (42.6%) were positive for fungal filaments in 30%KOH and 44 cases (43.6%) were positive for CSB. Two negative slides of CSB slides were positive for fungal filaments on day 2 examinations (3.5%). When 30-minute and

Day 2 readings were combined, the CSB stain was able to detect 4 more cases of dermatophytosis than the KOH wet mount.

In the study population, 27% (24 skin and 3 hair) were confirmed with dermatophytosis by culture. No dermatophytic aetiologies were recovered in nail samples. Accordingly, the CSB and KOH were equally sensitive in detecting fungal filaments in 26 out of 27(96.3%) samples which grew dermatophytes in culture, while the remaining one sample which grew dermatophyte in culture was negative for fungal filaments in direct examination (3.50%).

In the whole positive isolates 51.9% were suffering from tinea corporis and 14.8% each afflicted from tinea cruris and tinea pedis. In contrast, only 11.1% were clinically suffering from tinea capitis and the lowest prevalence of 7.4 % were seen with tenia faceii. *T. tonsurans* was the most common causative agent (n=12), followed by *M. gypsium* (n=3), two cases each of *T. soudanense, M. audonii* and *M. ferruginium* and one case each of *T. rubrum, T. interdigitale, T. mentagrophytes, T. verrucosum, T. equinum* and *E. floccosum.*

Thus it can be concluded that even though the sensitivity of 30%KOH and CSB is equal in isolating dermatophytes, the CSB is superior to KOH in locating fungal filaments from superficial samples as it is produce colour contrast. *Trichophyton tonsurans* and tinea coporis were the most common etiological agents and clinical types of dermatophytosis, respectively. These findings would be helpful in relation to patient management and direction for future research.