

## *Editorial*

### ***Recalcitrant Dermatophytosis: A serious threat to public health***

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For the last 2 years all the attention of health professionals was concentrated to the crisis of the century Pandemic COVID-19. But parallel to that another endemic crisis was also emerging in Indian subcontinent causing enormous sufferings to the patients and embarrassment for dermatologists—recalcitrant or treatment resistant dermatophytosis. Once what was very easy to diagnose and treat, today it becomes a great concern for its treatment failure.

Dermatophytosis or Tinea, a superficial fungal infection is one of the most common skin ailments in Bangladesh. Dermatophytes are fungi that invade and multiply within keratinized tissues (skin, hair, and nail) causing infection. Dermatophytosis or Tinea infections are the most common fungal infection affecting 20%-25% population globally. They are common in geographical areas with higher humidity. Overpopulation and poor hygienic living condition also contribute to dermatophyte infection<sup>1</sup>. Hot and humid climate of Bangladesh make dermatophytosis a common skin disease<sup>2</sup>.

Dermatophytosis had always been simple to treat with basket of antifungal agents available. Tropical antifungal preparations alone or in combination with oral antifungal were sufficient to treat this common ailment easily. Until recently Azole and Allylamines including Fluconazole, Itraconazole, Voriconazole and Terbinafin are chosen as systemic antifungals. But the number of patients with treatment failure or recalcitrant infection has been increasing for the last few years. Recalcitrant dermatophytosis refers to persistence, relapse, recurrence, reinfection, and possibly microbiological resistance.

The resistance is a microbiological term as is considered in case of failure to eliminate the lesion or

reappear within four weeks of complete course of therapy with a standard dose<sup>3</sup>. Antifungal susceptibility testing (AFST) is a reliable tool to decide the efficiency of the drug against a particular dermatophyte. AFST determines the minimum inhibitory concentration (MIC) value of particular antifungal which is used in the treatment protocol. As the different antifungal have varying efficacy against various dermatophytes, it is pertinent to carry out antifungal susceptibility testing (AFST) before labeling 'drug resistant' as a cause of failure. This is based on skin pharmacokinetics (PK) of major drug used in dermatophytosis. After administration of Terbinafin 200 mg daily for 2 weeks, drug concentration above the MIC (> 1 µ gm/ml) for most dermatophytes may persist 2-3 weeks after oral therapy is discontinued. Different antifungals show different MIC against various dermatophytes.

A randomized comparative study was conducted in the Dermatology & Venereology Department, Jahurul Islam Medical College Hospital, Bajitpur in the year of 2020. That study showed that complete cure (clinical and mycological) in case of full course of Terbinafin therapy was 62% and in case of Itraconazole was 60%.<sup>4</sup> So treatment failure is also alarming in Bangladesh and emerged as public health threat in endemic areas like India.<sup>5</sup>

In addition to drug resistance a few factors should be taken in consideration behind this treatment failure which includes (a) altered epidermal defense, (b) host immunity, (c) irrational use of steroid, (d) use of combination drugs of antifungal with steroid.

So, this is the high time to address this burning problem of increasing patient with recalcitrant dermatophytosis. Well equipped mycology laboratory with the facilities of testing AFST should be established in all tertiary

centres. Widespread resistant to conventional antifungal agents with increasing treatment failure warrant the search for new first line antifungal drugs that bring about rapid complete cure. Revised treatment protocol to treat the recalcitrant cases is the demand of the time now.

### References

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