TIMES OF DERMATOPHYTOSIS

A CME SPECIAL EDITION

DEMYSTIFYING DERMATOPHYTOSIS: EVOLVING CONCEPTS

IADVL EC, IADVL Academy & Task Force on Recalcitrant Dermatophytosis brought together experts to address the evolving challenges of dermatophytosis, with discussions spanning from changing mycology, antifungal susceptibility, combination therapy, special populations to updated guidance and emerging treatments.

Indian Association of Dermatologists, Venereologists & Leprologists (IADVL) EC & Task Force on Recalcitrant Dermatophytosis (IADVL Academy) in association with IADVL Telangana

ABOUT THE TASK FORCE & CME

IADVL Task Force on Recalcitrant Dermatophytosis, coordinated by Dr Ananta Khurana with Dr Jyothi Jayaraman as Convener, along with the members brings together dermatology, microbiology and pharmacology expertise to address difficult-to-treat dermatophytosis.

The Hyderabad CME titled "Demystifying Dermatophytosis: Evolving Concepts," was presented by the IADVL EC & Task Force on Recalcitrant Dermatophytosis (IADVL Academy) in association with IADVL Telangana on 5th July 2026.

CME HIGHLIGHTS

- **Changing mycology:** *Trichophyton indotineae* and antifungal resistance are reshaping dermatophytosis management.
- **Treatment until cure:** Expert consensus recommends treating *T. indotineae* infection until documented cure rather than relying on a fixed duration.
- **Rational combination therapy:** Topical plus systemic co-prescription may be advocated but yet lacks good evidence backing.
- **Relapse remains a challenge:** Reported relapse rates of 33%–65% reinforce the importance of patient counselling and appropriate treatment strategies.
- **Think beyond the classic ring:** Steroid-modified and atypical tinea may mimic other dermatoses and complicate diagnosis.
- **Steroid exposure matters:** Prior topical steroid/fixed-dose combination cream use is an important contributor to changing morphology and difficult-to-manage disease.
- **Strengthen diagnosis:** KOH test provides rapid fungal detection, while culture is the first step towards accurate identification of dermatophyte species.
- **Delivery, not just the drug:** Super-bioavailable itraconazole shows 21% less inter-patient variability and can be taken independently of food, but a pharmaco-kinetic advantage is not the same as proven clinical superiority.
- **Paediatric patterns are shifting:** *Tinea corporis* has overtaken *tinea capitis* as the commonest childhood dermatophytic infection, with the family acting as the main reservoir of infection.
- **Topicals alone:** IADVL consensus reserves topical monotherapy for selected cases such as; small, single lesions or for pregnant and lactating patients; combining multiple topical antifungals is not recommended.

EXPERT VOICES

"Species identification and antifungal susceptibility determination are key points for infection control but still remain challenging."

-Dr. Jyothi Lakshmi

"Treatment should be individualised based on the disease type, extent, and the patient's resistance status."

-Dr. Deblina Bhunia

"It is strongly recommended to treat the infection till a documented cure."

-Dr. Ananta Khurana

"Itraconazole resistance in India is not widespread; the core clinical limitation has fundamentally been the drug delivery mechanism."

-Dr. K. Venkata Chalam

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Shifting mycology, synergistic therapy, IADVL consensus & super-bioavailable itraconazole

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Closing summary, committee, acknowledgements & disclaimer

10:00 – 10:20 AM

Shifting Mycology

Dr. Jyothi Lakshmi

SHIFTING MYCOLOGY: *Trichophyton indotineae* - ROLE OF ANTI FUNGAL SUSCEPTIBILITY

MYCOLOGY DESK

Dr. Jyothi Lakshmi,
Professor of Microbiology, GMC–Jangaon,
traced how a newly described dermatophyte has rewritten the mycology of Indian tinea.

A NEW SPECIES, A GLOBAL FOOTPRINT. *T. indotineae*, part of the *T. mentagrophytes* complex and was formerly known as *T. mentagrophytes* ITS Genotype VIII. It emerged in India about ten years back, causes chronic and recurrent widespread superficial infection. It was recognised as a distinct species in 2020 with South Asian origins, it reached the US in 2023 and the UK in 2024 and now accounts for 40% of samples at the UK's National Reference Mycology Laboratory, overtaking *T. rubrum*.

CLINICAL FEAITURES: Unlike *T. interdigitale* (scalp, face, feet, nails) and *T. mentagrophytes* (trunk, genitals), *T. indotineae* causes extensive and mildly inflammatory infections with lesser chance of involvement of nails and scalp hair. Papulosquamous, pustular, pseudo-imbricata, lichenoid and pityriasis rosea-like forms have been reported along with a rapid spread to multiple sites.

RESISTANCE RINGS ALARM BELLS. In a review, terbinafine resistance was reported in up to 85% of samples, itraconazole resistance in 27%, and resistance to both in 15%. Terbinafine resistance arises from squalene epoxidase (SQLE) mutations — at positions F397L, L393S and F415C.

THE LAB MUST CATCH UP. Culture alone may not be useful as identification of *T. indotineae* required molecular methods. A continuous surveillance of species distribution, MICs, and resistance profiles is needed. AFST is not routinely performed, and no clinical breakpoints exist for dermatophytes yet the new EUCAST method (E.Def 11.0) offers tentative ECOFFs for *T. rubrum* and *T. interdigitale,* validated for terbinafine, voriconazole, itraconazole and amorolfine.

Key Message

"Species identification and antifungal susceptibility determination are key points for infection control but still remain challenging."

11:00 – 11:20 AM

Synergistic therapy

Dr. Deblina Bhunia

SYNERGISTIC TOPICAL AND SYSTEMIC ANTIFUNGAL THERAPY IN OPTIMIZING TREATMENT OUTCOMES

DERMATOLOGY DESK

Dr. Deblina Bhunia,
MD-DVL, MRCP-SCE (UK), Professor,
Department of DVL, M.G.M. Medical College,
Kishanganj, Bihar, weighed the rationale,
advantages and limitations of combining the
two routes of antifungal administration.

WIDELY PRACTISED, THINLY EVIDENCED. Combination therapy is common on the assumption that two drugs with different mechanisms outperform one, but evidence-based guidelines are scarce. Improper use can compromise efficacy, drive resistance and add cost.

WHY COMBINE. Oral agents target fungi in the deeper hair follicle and stratum corneum while topicals deliver high surface concentrations It is valuable in thick, hyperkeratotic lesions — and suppress shedding along lesion margins, limiting auto-inoculation. Newer topical agents provide additional anti-inflammatory and anti-bacterial effects. Sertaconazole inhibits the release of IL-2, TNF-α, IFN-α, IL-4, and GM-CSF, making it useful in inflammatory, steroid-modified, and mixed infections. Luliconazole offers a reservoir effect and the highest activity against *Trichophyton* spp. Amorolfine inhibits two key enzymes in ergosterol biosynthesis, resulting in both fungistatic and fungicidal activity.

Silver metallic nanoparticles exhibit broad-spectrum antifungal and antibacterial activity, potentially benefiting the management of mixed fungal infections.

SYNERGY *IN VITRO* ONLY. Checkerboard analysis found itraconazole synergistic with luliconazole, terbinafine and ketoconazole, and propylene glycol monocaprylate synergistic with luliconazole. Terbinafine with itraconazole was synergistic in four isolates despite terbinafine resistance. But robust randomised trials establishing superiority over oral monotherapy are still lacking, and a study by Khurana *et al.* reported a 92% cure rate with itraconazole alone.

THE RULE OF TWO — AND WHAT TO AVOID. Apply over the whole lesion twice daily. Application may be continued for short duration after clinical resolution (some newer azoles - once daily). Avoid unscientific combinations, irregular application, topical steroid combinations and early stoppage. Cost, extensive disease and difficult-to-reach sites remain real constraints.

Key Message

"Treatment should be individualised based on the disease type, extent, and the patient's resistance status."

12:20 – 12:40 PM

IADVL CONSENSUS

Dr. Ananta Khurana

IADVL CONSENSUS RECOMMENDATIONS ON *TRICHOPHYTON INDOTINEAE* INFECTIONS

Diagnostic pathways, therapeutic guidelines, and clinical algorithms derived from a modified Delphi Method.

DERMATOLOGY DESK

Dr. Ananta Khurana, MD,
DNB, MNAMS, FRCP (L), Professor,
Department of Dermatology, STDs and Leprosy,
Dr RML Hospital and ABVIMS, New Delhi,
presented the IADVL Task Force on Recalcitrant Dermatophytosis consensus document intended as a resource for dermatologists and mycologists worldwide.

WHY AN UPDATE WAS NEEDED. Chronic, recalcitrant and relapsing infections are increasingly seen, with the *T.indotineae* emerging as the major pathogen. *T. indotineae* was designated a distinct species in 2020 based on molecular identification. Terbinafine resistance is linked to SQLE substitutions — Phe397Leu in 95% of studies — while TinCYP51B overexpression may reduce azole susceptibility, although the same remains to be proven in larger samples.

DIAGNOSIS. KOH smear is recommended for atypical *tinea corporis, cruri*s and *faciei*; culture is essential for mycological patterns; ITS sequencing is recommended to confirm *T. indotineae*. AFST anchored by CLSI and EUCAST methods is recommended where facilities exist, with EUCAST cut-off values distinguishing wild-type from mutant strains.

TREATMENT. Itraconazole 200 mg/day is recommended as first-line, while higher doses than this are not recommended; SUBA-ITZ 130 mg/day is an option; terbinafine 500 mg/day is second-line. Luliconazole and sertaconazole are recommended topical antifungals for *T. indotineae*, supported by high expert consensus. Voriconazole and posaconazole are not recommended. Topicals alone are insufficient for most infections, and combining multiple topical antifungals is not recommended. Switch the systemic agent if response is suboptimal at 4 weeks. Treatment until documented cure 64.3% of experts favoured beyond 8 weeks, though no consensus was reached on the optimum duration; 81.1% agreed on continuing systemic therapy 2 weeks beyond clinical cure.

RELAPSE AND SPECIAL SCENARIOS. Relapse rates range from 33% to 65%; counselling patients at both initiation and cessation, and treat relapses with the regimen and dose that achieved cure,To stop the use of topical steroids immediately. Terbinafine 250 mg/day is recommended in pregnancy with extensive lesions and in cardiac failure; fluconazole in lactation; itraconazole with dose adjustment in renal impairment. Oral isotretinoin, topical salicylic acid, antifungal soaps & powders should not be co-prescribed.

Key Message

“It is strongly recommended to treat the infection till a documented cure.”

11:20 – 11:40 AM

SUPER-BIOAVAILABLE ITRACONAZOLE

Dr. K. Venkata Chalam

Super-bioavailable itraconazole (SUBA-ITZ): DOES BETTER BIO-AVAILABILITY TRANSLATE INTO BETTER OUTCOMES?

DERMATOLOGY DESK

Dr. K. Venkata Chalam,
Professor & Head, Department of Dermatology,
Government Medical College, Vizianagaram,
evaluated the pharmacokinetic promise of SB-ITZ against its clinical record.

THE PROBLEM WITH THE CONVENTIONAL CAPSULE.
Conventional itraconazole (C-ITZ) relies on an HPMC-coated pellet formulation, depends on an acidic stomach, and is limited to 55% baseline bioavailability with non-linear pharmacokinetics and severe food and antacid interaction. Itraconazole itself remains favourable - most *T.indotineae* isolates stay below the upper limit of wild-type MIC, with no widespread mutations reducing susceptibility, and the drug concentrates five to ten times higher in sebum than plasma.

WHAT SB-ITZ CHANGES. A solid, non-pellet dispersion in a pH-dependent hypromellose phthalate matrix stays stable in gastric acid and disintegrates only in the small intestine, giving targeted proximal release. The result is 21% less inter-patient variability, steady state in both fasting and fed states, and no loss of absorption with omeprazole (+22% AUC). Dosing equivalence: 50/65/130 mg SB-ITZ against 100/200 mg C-ITZ.

WHAT THE TRIALS SHOW. Complete cure at 4 weeks was 65.38% with SB-ITZ versus 33.33% with C-ITZ and 56% versus 34% , with symptom scores falling by week 2 — but mycological cure was not statistically significant (84% vs 61%) and there was no advantage in recurrence. Sahni *et al.* (2026) found cure rates similar in treatment-naïve patients, while in recalcitrant patients clinical cure at six weeks was significantly higher with SB-ITZ (p = 0.029), with fewer adverse effects.

WHAT CONSENSUS ADVISES. The IADVL Task Force position statement holds that itraconazole resistance in India is not widespread and that the core limitation has been drug delivery. The Indian Delphi consensus recommends 130 mg once daily as starting option, esp in those with bio-availability concerns.

Key Message

“Better bioavailability should not automatically be equated with superior clinical efficacy.”

THE FINAL WORD | RETHINKING TINEA, REDEFINING CARE

From changing mycology to smarter treatment, the message is clear: dermatophytosis management must evolve with the disease.

The lectures also highlighted the management of special situations in dermatophytosis by Dr. R Madhu, approach to pediatric cases of dermatophytosis by Dr. Bhumesh Kumar Katakam. This was followed by a panel discussion on emerging therapies in management of dermatophytosis, moderated by by Dr. Putta Srinivas with all speakers and Dr. Sudharani and Dr. M Shahana as the eminent panelists. Scientific programme was concluded with paper presentation by Post graduates. Across sessions, the emphasis remained consistent: strengthen diagnosis, recognize resistance, individualize antifungal therapy and avoid indiscriminate treatment.

WHAT THE DAY TAUGHT US

The scientific programme moved from shifting mycology and antifungal susceptibility testing, through the rationale and limits of synergistic topical-systemic therapy, to the IADVL consensus on *T. indotineae* infection and the clinical test facing superbioavailable itraconazole. The paper presentations by postgraduates then brought the discussion to the bedside: trichoscopy in childhood *tinea capitis*, dermoscopy and changing patterns in paediatric dermatophytosis, atypical and steroid-modified disease, the clinico-epidemiological and mycological profile of superficial dermatophytosis, and the laboratory spectrum of clinically suspected cases. Together they approached difficult-to-treat dermatophytosis from different complementary clinical perspectives.

ACKNOWLEDGEMENTS - A COLLECTIVE EFFORT

The newsletter acknowledges the IADVL National EC, IADVL Academy, IADVL Task Force on Recalcitrant Dermatophytosis, IADVL Telangana State Branch, faculty, moderators, panelists, presenters and participating delegates whose scientific exchange contributed to the CME. The programme covered the spectrum from changing mycology and current therapeutic challenges to emerging approaches in dermatophytosis management.

TAKE-HOME MESSAGE

Accurate diagnosis | Resistance awareness | Rational antifungal use
Appropriate treatment duration | Antifungal stewardship

Together, these remain central to improving outcomes in today's evolving dermatophytosis landscape.

BEHIND THE SCIENCE | THE TEAM THAT MADE IT POSSIBLE

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