Conflicts of interest
There are no conflicts of interest.

Rajsmita Bhattacharjee, Sunil Dogra

Department of Dermatology, Venereology and Leprology, Postgraduate Institute of Medical Education and Research, Chandigarh, India

Correspondence: Dr. Sunil Dogra, Department of Dermatology, Venereology, and Leprology, Postgraduate Institute of Medical Education and Research, Chandigarh - 160 012, India.
E-mail: sundogra@hotmail.com

References

1. Singh S, Shukla P. End of the road for terbinafine? Results of a pragmatic prospective cohort study of 500 patients. Indian J Dermatol Venereol Leprol 2018;84:554-7.
2. Rajagopalan M, Inamadar A, Mittal A, Miskeen AK, Srinivas CR, Sardana K, *et al.* Expert consensus on the management of dermatophytosis in India (ECTODERM India). BMC Dermatol 2018;18:6.
3. Verma SB, Vasani R. Male genital dermatophytosis – Clinical features and the effects of the misuse of topical steroids and steroid combinations – An alarming problem in India. Mycoses 2016;59:606-14.
4. Pathania S, Rudramurthy SM, Narang T, Saikia UN, Dogra S. A prospective study of the epidemiological and clinical patterns of recurrent dermatophytosis at a tertiary care hospital in India. Indian J Dermatol Venereol Leprol 2018 July (Epub ahead of print).

Access this article online

Quick Response Code:

Website: www.ijdvl.com

DOI: 10.4103/ijdvl.IJDVL_717_18

How to cite this article: Bhattacharjee R, Dogra S. 'End of the road for terbinafine' in dermatophytosis: Is it a valid conclusion?. Indian J Dermatol Venereol Leprol 0;0:0.

Received: August, 2018. **Accepted:** September, 2018.

Authors' reply

Sir,

We welcome the comments on our article[1] and thank you for the opportunity to make our humble submission in reply [Table 1]. In this pragmatic study,[1] the focus was on real-life situation in view of perceived recent loss of effectiveness of terbinafine in dermatophytic infections in India. Our objective was to find the evidence for or against the above perception. The study provides evidence that yes, there is a problem, and this is how grave it is.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

Table 1: Issues raised and the replies

Issue number	Issue	Reply
1	In this prospective cohort study, 500 patients of dermatophytosis were included and treated with oral terbinafine (5 mg/kg/day) for a maximum duration of 4 weeks.	As only 10 of 500 patients were cured at 2 weeks, 490 of 500 patients received treatment for 4 weeks.
2	It is well known that the unregulated availability and use of such irrational corticosteroid-antifungal- antibacterial combinations causes a reduction in the local cellular immunity, thereby playing an important role in making the dermatophytosis notoriously recalcitrant.	Cited article[2] is an important case series (with review) of 24 male patients with genital tinea who were incorrectly using topical steroid combination creams. Data presented in this article[2] do not relate to the attributions made in this comment on our article
3	Use of terbinafine in this study has not been compared with any other standard drug like itraconazole in a parallel arm.	As mentioned,[1] aim of the study was to investigate the effectiveness of terbinafine in a pragmatic setting, and not to compare its effectiveness with other antifungal agents
4	Use of terbinafine for duration of 4 weeks is perhaps not adequate to determine its effectiveness in causing cure, and treatment longer than 4 weeks would perhaps have improved the cure rates much higher.	Weight-adjusted dose of terbinafine used in the study is higher and duration of treatment much longer than those recommended by standard textbooks, which recommend a fixed dose of 250 mg per day to be given for 1 to 3 weeks,[3] 1 to 2 weeks,[4] or 10 to 14 days,[5] for tinea corporis and tinea cruris. Please also see reply to issue number 5.

(contd.....)

Table 1: Contd.....

Issue number	Issue	Reply
5	It has been recommended that minimum duration of treatment should be 2-4 weeks in naïve cases and >4 weeks in recalcitrant cases.	1. Please refer to selection criteria mentioned in the article,[1] there is no criteria related to recalcitrant tinea, rather, all patients were consecutively selected. Furthermore, only 35 of 500 (7%) patients had taken an oral antifungal drug in past (Table 2 of the article in question),[1] so their proportion is minuscule. 2. Cited reference is an experience-based consensus statement, as mentioned in the article.[6] The guidelines[6] are important in the current situation. The study in question[1] showed that terbinafine in higher doses and given for much longer duration than recommended in standard textbooks has abysmal cure rate. Answers to the following questions await further studies: (a) Will further prolonging the duration of treatment help? (b) How longer than 4 weeks should the duration of treatment be? And (c) What will be the quantum of benefit versus harm with such treatment? Had we treated the patients for, say, 5 weeks, it could still be said that maybe 6 weeks would be better, and so on. Indeed, the consensus statement also emphasizes the need for evidence (e.g. in 'scope and objectives').[6]
6	The calculation of cure rate at the end of 4 weeks also seems fallacious (153 cured out of 362 giving a cure rate of 42.3% instead of 30.6% as mentioned in the article).	Please refer to second paragraph of Results section of the article,[1] which mentions that we did (the preferred) intention-to-treat analysis. Therefore, the denominator for calculating cure rate will be 500, not 362, with resultant cure rate of 30.6%.
7	Possibility of reinfection	We treated the patients for four weeks and noted the cure rate. The patients classified as treatment failure never achieved cure in the first place. It is not that they were cured and then relapsed. Therefore, the possibility of reinfection does not apply here.
8	Information regarding demographic and socioeconomic variables and advice regarding hygiene were not provided.	There are no published data which show that these variables affect treatment outcome in tinea.
9	We would like to conclude that future well designed studies comparing effectiveness of terbinafine with other standard drugs like itraconazole should be conducted before concluding that it is the end of the road for terbinafine.	Please see reply to issue number 3. We did not hypothesize (e.g. about cause(s) of lack of effectiveness of terbinafine), rather, we presented data which show that terbinafine now has abysmal cure rate.

Sanjay Singh, Prakriti Shukla[1]

Department of Dermatology and Venereology, Institute of Medical Sciences, Banaras Hindu University, Varanasi, [1]Department of Dermatology, Venereology and Leprosy, King George's Medical University, Lucknow, Uttar Pradesh, India

Correspondence: Dr. Sanjay Singh,
Department of Dermatology and Venereology,
Institute of Medical Sciences, Banaras Hindu University,
Varanasi - 221 005, Uttar Pradesh, India.
E-mail: sanjaye2@gmail.com

References

1. Singh S, Shukla P. End of the road for terbinafine? Results of a pragmatic prospective cohort study of 500 patients. Indian J Dermatol Venereol Leprol 2018;84:554-7.
2. Verma SB, Vasani R. Male genital dermatophytosis—clinical features and the effects of the misuse of topical steroids and steroid combinations—an alarming problem in India. Mycoses 2016;59:606-14.
3. Hay RJ, Ashbee HR. Fungal infections. In: Griffiths CEM, Barker J, BleikerT, Chalmers R, Creamer D, editors. Rook's Textbook of Dermatology. 9th ed. West Sussex: John Wiley and Sons; 2016. p. 32.1-32.96.
4. Jacob R, Konnikov N. Oral antifungal agents. In: Goldsmith LA, Katz SI, Gilchrest BA, Paller AS, Leffell DJ, Wolff K, editors. Fitzpatrick's Dermatology in General Medicine. 8th ed. New York: McGraw-Hill; 2012. p. 2796-2806.
5. Shenoy MM, Shenoy SM. Superficial fungal infections. In: Sacchidanand S, Oberai C, Inamadar AC, editors. IADVL Textbook of Dermatology. 4th ed. Mumbai: Bhalani; 2015. p. 459-516.
6. Rajagopalan M, Inamadar A, Mittal A, Miskeen AK, Srinivas CR, Sardana K, Godse K, Patel K, Rengasamy M, Rudramurthy S, Dogra S. Expert consensus on the management of dermatophytosis in India (ECTODERM India). BMC Dermatol 2018;18:6.

Access this article online

Quick Response Code:

Website: www.ijdvl.com

DOI: 10.4103/ijdvl.IJDVL_779_18

PMID: *****

How to cite this article: Singh S, Shukla P. Authors' reply. Indian J Dermatol Venereol Leprol 0;0:0.

Received: September, 2018. **Accepted:** September, 2018.