

Treatment outcome of efinaconazole 10% solution and luliconazole 5% solution for onychomycosis in Japan

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Introduction

Many clinicians prefer to treat onychomycosis systemically. However, systemic therapy may not be suitable for all onychomycosis patients due to drug interactions, side effects of oral medications, or comorbidities. Two topical agents (efinaconazole 10% in 2014 and luliconazole 5% in 2016) have recently been approved for treatment of onychomycosis in Japan. We investigated the efficacy of these topical agents at Teikyo University Mizonokuchi Hospital, Kanagawa, Japan in 2014 to 2017.

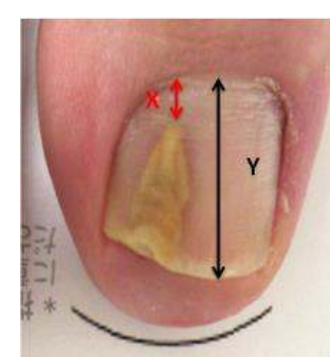
Method

We conducted a survey among patients diagnosed with onychomycosis at our outpatient clinic treated with either efinaconazole 10% solution or luliconazole 5% solution. Prior to commencement of treatment, the disease severity was evaluated using the Scoring Clinical Index for Onychomycosis (SCIO)¹. Furthermore, the efficacies of these agents were evaluated using turbidity ratio² at each visit to our outpatient clinic.

The Scoring Clinical Index for Onychomycosis(SCIO) SCORE

Key Factor	Grade 1	Grade 2	Grade 3
Clinical form	SWO	DLSO	PSO
Depth of involvement	<1/3	1/3 to 2/3	>2/3
Degree of hyperkeratosis	absent or <1mm	1-2mm	>2mm
Location	II-IV fingernails	Thumb nail or II-IV toenails	Big toenails
Age of patient, years	<25	25-60	>60

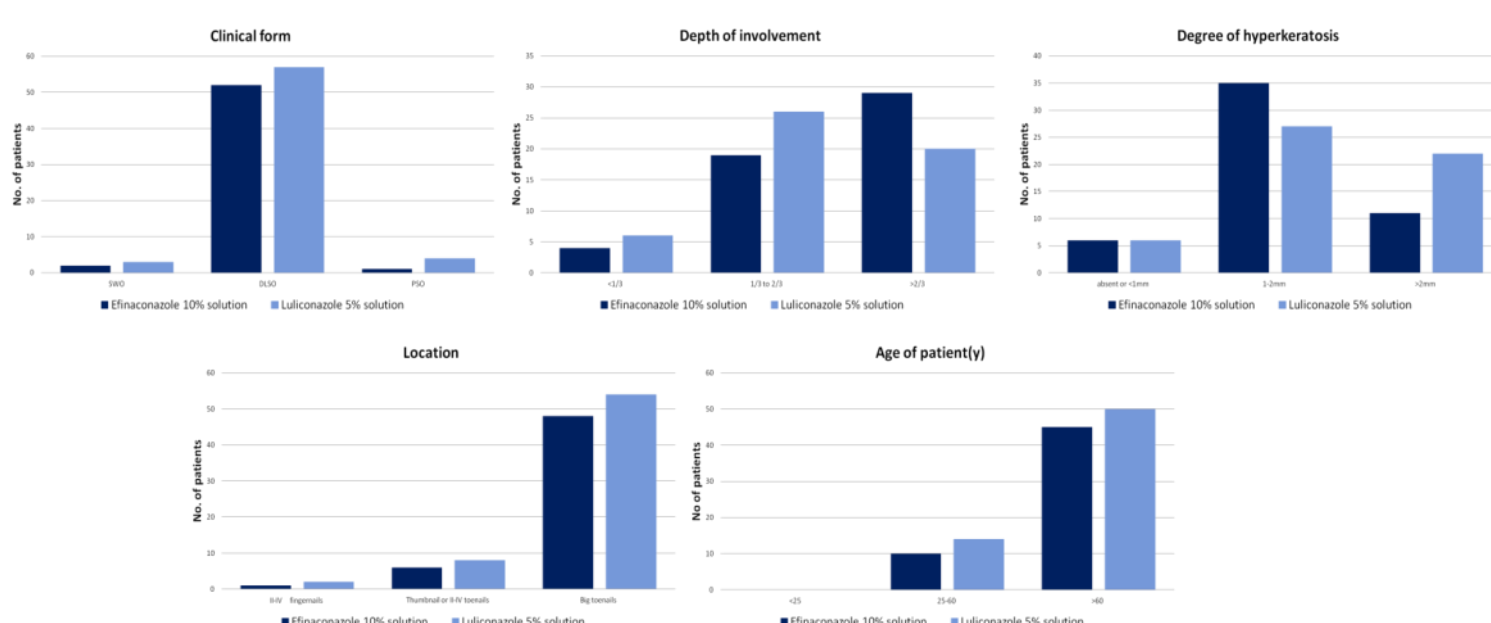
The efficacies were evaluated using turbidity ratio



Length of uninfected toenail growth proximal to turbidity = X
 Total length of toenail = Y
 Turbidity score = (1-X/Y)x10
 Z = (Turbidity score at baseline)-(Turbidity score at each visit)

5-grade evaluation	
1.No clearance :	Z<1.0
2.Slight clearance :	1.0 ≤ Z < 3.0
3.Moderate clearance :	3.0 ≤ Z < 6.0
4.Significant clearance :	6.0 ≤ Z
5.Complete clearance :	with negative microscopic result.

Profiles of patients



SCIO SCORE and Recommended Treatment

SCIO	Treatment approach
1-3	Topical treatment : remove (cut or scrape off) affected marginal parts of the nail. Use topical antifungals until healthy nail re-grows
3-6	Topical treatment with lower success, which often depends on growth rate. Systemic therapy recommended in slower-growing nails or proximal onychomycosis type
6-9	Systemic therapy. Use scheme proposed for fingernails (e.g., itraconazole: 2 pulses of 200mg bid)
9-12	Systemic therapy. Use scheme proposed for toenails (e.g., itraconazole: 3 pulses of 200mg bid)
12-16	Systemic therapy. Use scheme proposed for fingernails with any antifungal (e.g., 4-5 pulses of itraconazole, 200mg bid)
16-20	Combination therapy (systemic antifungal + topical measures) Adequate keratolytic treatment recommended
20-30	Consider nail avulsion (e.g., with urea paste), continue with systemic therapy

Result of Efinaconazole 10% solution

5-grade clearance	Number of patients	SCIO *	Turbidity score*		Duration for treatment(m) *	Age(y) *
			Before	After		
No	8(14%)	17.9	7.6	7.3	10	70.2
Slight	13(24%)	17.4	6.6	4.7	13.4	72.5
Moderate	18(33%)	22.3	7.9	4	16.6	73.1
Significant	4(7%)	22.5	9.5	1.7	19.2	60.5
Complete	12(22%)	11.8	5.4	0	13.1	67.3
Total	55	18.1	7.1	3.6	14.3	70.4

*:Average

Result of Luliconazole 5% solution

5-grade clearance	Number of patients	SCIO *	Turbidity score*		Duration for treatment(m) *	Age(y) *
			Before	After		
No	10(15%)	21.2	9.0	8.3	8.3	77.6
Slight	21(32%)	17.1	7.6	5.1	11.5	72.5
Moderate	11(18%)	18.2	7.6	3.2	11.1	70.6
Significant	5(8%)	28	8.7	2.2	11	75.4
Complete	17(27%)	10.6	5.3	0	8.8	67.4
Total	64	16.9	7.3	3.7	10.2	71.8

*:Average

Discussion

Fifty-five patients treated efinaconazole 10% solution and 64 patients treated luliconazole 5% solution. Sergeev et al. recommended systemic therapy in onychomycosis with SCIO score > 6¹⁾ and we considered our results based on this score. In both topical agent, complete cure rates were 100% in SCIO score < 6. In cases with the SCIO score > 6, efficacies of the topical agent were 84%(42/50) and 83%(40/60) and complete cure rates were 14%(7/50) and 22%(13/60), respectively. In conclusion, there were no significant differences in efficacy between efinaconazole 10% solution and luliconazole 5% solution (Fisher's LSD). Therefore, these topical agents may become effective tools not only in slight onychomycosis but also in severe cases as systemic therapy is recommended.

References

- 1) Sergeev A.Y, Gupta A.K, Sergeev Y.V : Skin Therapy Letter 2002 ; Suppl 1 ; 6-7
- 2) Yasushi Suga, Utako Kimura, Masataro Hiruma : Med. Mycol. J. 55 : J65-J71, 2014

COI: The authors alone are responsible for the content and writing of the paper and declare no conflicts of interest.