

## Isoconazole nitrate in the treatment of tropical dermatomycoses

### Isoconazolnitrat-Behandlung tropischer Dermatomykosen

H. C. Gugnani<sup>1</sup>, L. E. Akpata<sup>2</sup>, M. K. Gugnani<sup>3</sup> and R. Srivastava<sup>2</sup>

**Key words.** *Trichophyton*, *Malassezia*, *Candida*, *Trichosporon*, *Geotrichum*, dermatomycosis, tinea, pityriasis, antimycotic chemotherapy, isoconazole, Nigeria.

**Schlüsselwörter.** *Trichophyton*, *Malassezia*, *Candida*, *Trichosporon*, *Geotrichum*, Dermatomykose, Tinea, Pityriasis, antimykotische Chemotherapie, Isoconazol, Nigeria.

**Summary.** A total of 54 patients with culturally proven tropical dermatomycoses, comprising 23 with various types of dermatophytoses, one with foot infection due to *Trichosporon beigelii* and one with foot infection due to *Geotrichum candidum*, two with candidoses of the groin and 27 with pityriasis versicolor, were included in a clinical trial of efficacy of 1% isoconazole cream (Travogen<sup>R</sup>, Schering, Berlin, Germany). Five patients were not evaluable. A clinical and mycological cure was achieved in 29 cases in 3–4 weeks. In 15 (31%) of the remaining patients treatment was required for 5–6 weeks, while another three patients required treatment for 8 weeks. In two patients the disease proved to be resistant to treatment with the drug.

**Zusammenfassung.** Insgesamt 54 Patienten mit kulturell gesicherter Dermatomykose, (23 unterschiedliche Dermatophytosen, eine *Trichosporon beigelii*- und eine *Geotrichum candidum*-Fußinfektion, 2 Candidosen der Leistengegend und 27 Pityriasis versicolor) wurden in einer klinischen Wirksamkeitsstudie mit 1%iger Isoconazol-Creme (Travogen<sup>R</sup>, Schering, Berlin, Deutschland) behandelt. Fünf Patienten waren nicht auswertbar. Eine klinische und mykologische Heilung wurde bei 47 von 49 Patienten (96%) erreicht. Bei 29 Patienten (59%) wurde die Heilung bereits nach 3–4 Wochen Behandlung erreicht. Weitere 15 Patienten (31%)

benötigten 5–6 Wochen und drei Patienten 8 Wochen Behandlungsdauer. Zwei Mykosesituationen erwiesen sich als therapieresistent.

### Introduction

Dermatomycoses are the commonest mycotic infections [1]. They are especially prevalent in tropical countries such as Nigeria because of the warm, humid, tropical climate and the crowded living and relatively poor socioeconomic conditions [2]. With the increasing availability of laboratory facilities, physicians and microbiologists can now correctly diagnose many more cases than ever before. In addition to systemic antifungal drugs such as griseofulvin and ketoconazole, which are given orally, several topical antimycotics, mainly imidazoles, are available. Isoconazole nitrate is an imidazole recently introduced in Nigeria. Very recently, Oyeka & Gugnani [3] reported success with 1% isoconazole cream (Travogen<sup>R</sup>, Schering, Berlin, Germany) in the treatment of foot infections due to *Hendersonula toruloidea*, *Scytalidium hyalinum* and dermatophytes. This communication reports its efficacy in the therapy of diverse clinical types of tropical dermatomycoses.

### Patients and methods

A total of 54 patients with culturally proven tropical dermatomycoses were entered into the trial. Most of the patients (34) were industrial workers in Calabar, Cross River State, Nigeria, surveyed for prevalence of dermatomycoses [4]. The remaining 20 patients were referred to one

<sup>1</sup>Department of Microbiology, University of Nigeria, Nsukka,  
<sup>2</sup>Department of Medical Microbiology, University of Calabar,  
Calabar, and <sup>3</sup>University of Nigeria Teaching Hospital,  
Enugu, Nigeria.

Correspondence: Prof. Dr H. C. Gugnani, Department of Microbiology, University of Nigeria, Nsukka, Nigeria.

of us (M.K.G.) from several private clinics in Enugu, Enugu State, Nigeria.

The 27 patients with pityriasis versicolor included 21 males and six females aged 15–45 years. The sites of lesions were trunk, legs, arms, neck and face in order of frequency. Among the dermatophytoses were 14 cases of tinea pedis in 10 males and four females aged 18–44 years with lesions on the toe web and sole, three cases of tinea cruris in males aged 19–40 years and six cases of tinea corporis in four males and two females aged 19–35 years. Of the remaining four patients, two had candidosis of groin and one each foot infection due to *Geotrichum candidum* and *Trichosporon beigelii*, all males aged 25–44 years. Five of the patients, including three with pityriasis versicolor and one each with tinea pedis and tinea corporis dropped out of the trial and were not available for follow-up after initial treatment for 2 weeks.

The diagnosis of pityriasis versicolor was based on microscopic demonstration of characteristic hyphae and blastospores of *Malassezia furfur* in skin scrapings. In all other clinical types, diagnosis was based on direct microscopy and culture. Informed consent for the trial was obtained from all patients. Each patient was individually instructed to apply topically the isoconazole cream to the lesions twice daily, after cleaning the affected part(s). The patients were seen at weekly intervals for management. Disappearance of clinical signs and symp-

toms and the absence of aetiological agents in direct microscopy and culture was regarded as a cure.

## Results

The aetiological agents with reference to the types of localization are listed in Table 1. A clinical and mycological cure was achieved in 29 patients (59%) within 3–4 weeks of application of the cream. The patients who required 6 or 8 weeks' treatment had generally extensive lesions. No side-effects were observed in any of the treated patients. In two patients, one with pityriasis versicolor and one with tinea pedis due to *Trichophyton rubrum* the disease was chronic with lesions of several years' duration and was resistant to treatment.

All treated patients were followed for up to 6 weeks after treatment. Three patients, two with pityriasis versicolor and one with tinea pedis (caused by *Trichophyton rubrum*) relapsed with re-appearance of lesions but were cured with another 5 weeks of treatment with isoconazole cream.

## Discussion

As mycotic infections of skin are very common and constitute a public health problem in Nigeria [2], it is desirable to have access to several effective

**Table 1.** Treatment of different types of tropical dermatomycoses with isoconazole nitrate

Clinical type	No. of patients treated	Aetiological agent(s)	No. of cases cured after treatment for				No. resistant to treatment	Total number cured (%)
			3 weeks	4 weeks	5–6 weeks	8 weeks		
Pityriasis versicolor	24	<i>Malassezia furfur</i> <i>Trichophyton mentagrophytes</i> <i>T. rubrum</i>	9	7	6	1	1	23 (96)
Tinea pedis	13	<i>T. soudanense</i> <i>Epidermophyton floccosum</i> <i>Trichosporon beigelii</i>	2	5	4	1	1	12 (92)
Foot infection due to other fungi	2	<i>Geotrichum candidum</i> <i>T. rubrum</i> <i>T. soudanense</i>		1	1			2 (100)
Tinea corporis	5	<i>T. verrucosum</i>	2		3			5 (100)
Tinea cruris	3	<i>T. rubrum</i>		1	1	1		3 (100)
Candidosis of groin	2	<i>Candida albicans</i>	1	1				2 (100)
Total	49		14	15	15	3	2	47 (96)

and inexpensive drugs for treatment. The available oral antimycotics, namely griseofulvin and ketoconazole, are expensive and cause side-effects. Some topical antimycotics, e.g. haloprogin and tioconazole, have been used successfully to treat superficial mycoses in Nigeria [5-7].

The efficacy of isoconazole nitrate cream (Travogen<sup>R</sup>) and its combination with a corticosteroid (Travocort<sup>R</sup>, Schering, Berlin, Germany) in the treatment of inflammatory and allergic dermatomycoses was first reported by Weitgasser & Herms [8] and Gip & Langen [9]. Very recently, Oyeka & Gugnani [3] reported success with isoconazole in the treatment of superficial fungus infections of feet caused by dermatophytes as well as those caused by *Hendersonula toruloidea* and *Scytalidium hyalinum* in Nigeria. The present study has demonstrated that isoconazole cream is highly effective for therapy of a wide range of tropical dermatomycoses caused by a variety of species of dermatophytes, yeasts and *Geotrichum candidum*.

### Acknowledgements

The authors are very grateful to Schering Corporation, Germany, for supplying the isoconazole nitrate cream for the clinical trial. We are also grateful to the managers of the factories where the industrial workers were employed for their

cooperation and to the physicians in Enugu for referring some of the patients included in the study.

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