Acta Tropica 150 (2015) 111–115

Contents lists available at ScienceDirect

Acta Tropica

journal homepage: www.elsevier.com/locate/actatropica

Dermatophytosis in patients with human immunodeficiency virus infection: Clinical aspects and etiologic agents

J.E.F. Costa[a,1], R.P. Neves[b,1], M.M. Delgado[c,2], R.G. Lima-Neto[d,1], V.M.S. Morais[a,e,1], M.R.C.D. Coêlho[f,*,1]

[a] Department of Tropical Medicine, Center for Health Sciences, Federal University of Pernambuco, Brazil
[b] Laboratory of Medical Mycology, Department of Mycology, Centre of Biological Sciences, Federal University of Pernambuco, Brazil
[c] Correia Picanço Hospital, Brazil
[d] Department of Tropical Medicine, Center for Health Sciences, Federal University of Pernambuco, Brazil
[e] Virology Division, Laboratory of Immunopathology Keizo Asami, Federal University of Pernambuco, Brazil
[f] Division of Virology, Laboratory of Immunopathology Keizo Asami (LIKA), Department of Physiology and Pharmacology, Center of Biological Sciences, Federal University of Pernambuco, Brazil

ARTICLE INFO

Article history:
Received 28 January 2015
Received in revised form 10 July 2015
Accepted 12 July 2015
Available online 19 July 2015

Keywords:
AIDS
Dermatophytosis
HIV

ABSTRACT

Dermatophytosis in individuals with human immunodeficiency virus infection seems to manifest with atypical, multiple, or extensive lesions more frequently. In addition, there are reports of presentations with little inflammation, called anergics. Less common etiologic agents have been isolated in these individuals, such as *Microsporum* species. To describe clinical aspects and etiologic agents of dermatophytosis in individuals with human immunodeficiency virus (HIV) infection. Patients with clinical diagnosis of dermatophytosis underwent scarification for mycological diagnosis through direct microscopic examination and fungal isolation in culture on Sabouraud dextrose agar. Sixty individuals had a clinical hypothesis of dermatophytosis. In 20 (33.3%) of the 60 patients, dermatophytosis was confirmed through a mycological study. Tinea corporis, diagnosed in 14 patients, was the most frequent clinical form, followed by tinea unguium in 7, tinea cruris in 5, and tinea pedis in 1 patient. Most of the lesions of tinea corporis were anergic. Five patients with tinea unguium had involvement of multiple nails, with onychodystrophy as the predominant subtype. Multiple cutaneous lesions occurred in 3 patients and extensive cutaneous lesions in 4. Regarding the agent, *Trichophyton rubrum* was the most commonly isolated. The high occurrence of anergic skin lesions and involvement of multiple nails, especially as onychodystrophy, corroborates the hypothesis that atypical, disseminated, and more severe presentations are common in individuals with HIV infection. However, no *Microsporum* species was isolated even in atypical, extensive, or disseminated cases, in disagreement with previous reports. Therefore, the approach of squamous lesions in HIV-positive patients must include a mycological study, in view of the possibility of anergic dermatophytosis, to promote the introduction of a suitable therapeutic agent.

1. Introduction

In individuals with human immunodeficiency virus (HIV) infection, the clinical presentation of dermatophytosis seems to greatly vary (Ramos-e-Silva et al., 2010). Unusual forms of tinea capitis in adults, tinea faciei, lesions with dermal involvement, and atypical, extensive and disseminated lesions are reported more often, mainly in association with the immunosuppression stage of HIV infection (Aly and Berger, 1996; Rosatelli et al., 1997; Burkhart et al., 2003; Venkatesan et al., 2005; Khambaty and Hsu, 2010). Proximal white subungual onychomycosis, the rarest form of onychomycosis in the general population, is described as a sign of HIV infection, occurring almost exclusively in individuals with

* Corresponding author at: Rua Manoel Lubambo, 118, Afogados 50, 850-040, Recife-PE, Brazil.
E-mail addresses: joanne_ferraz@yahoo.com.br (J.E.F. Costa), rejadel@yahoo.com.br (R.P. Neves), mariliaderma@gmail.com (M.M. Delgado), goncalves_reginaldo@hotmail.com (R.G. Lima-Neto), vivi.martha@hotmail.com (V.M.S. Morais), rcoelholika@gmail.com, rcoelholika@gmail.com (M.R.C.D. Coêlho).
[1] Address: Av. Prof. Moraes Rego, 1235, Cidade Universitária, Recife-PE, 50670-901, Brazil.
[2] Address: Rua Padre Roma, 149, Tamarineira, Recife-PE, 52060-060, Brazil.

http://dx.doi.org/10.1016/j.actatropica.2015.07.012
0001-706X/

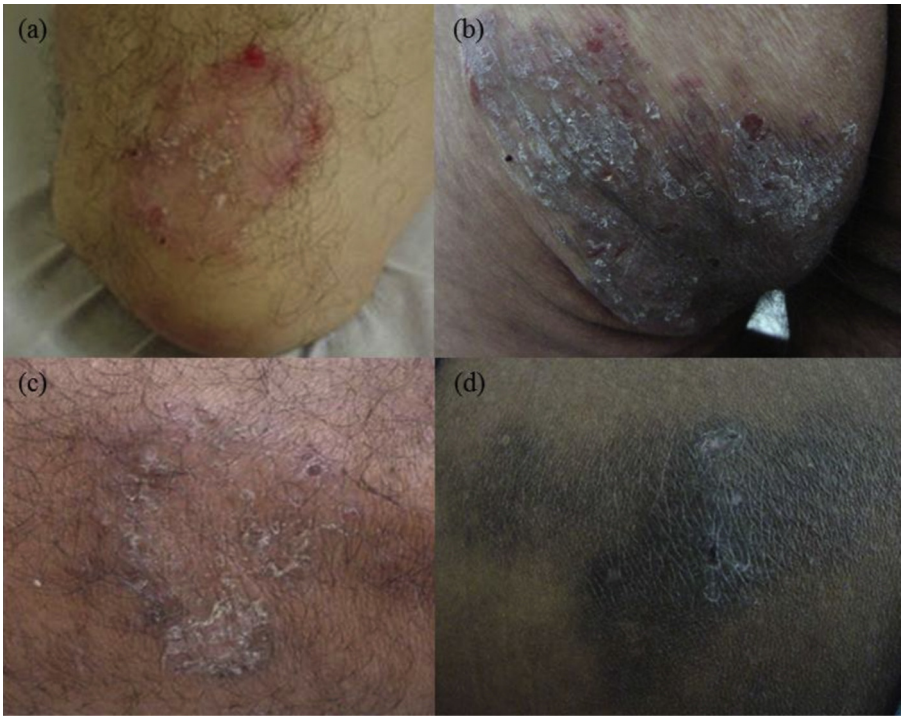

Fig. 1. Typical lesions of tinea corporis circinate in the forearm (a) and gluteal region (b). Anergic skin lesions of dermatophytosis in the forearm (c) and thigh (d).

acquired immunodeficiency syndrome (AIDS). Furthermore, the nail impairment in these individuals tends to be multiple and more severe (Aly and Berger, 1996; Rosatelli et al., 1997; Khambaty and Hsu, 2010). Less common etiologic agents of tinea in humans have been described as promoting atypical presentations, especially in association with severe immunosuppression. Among these agents, species of the genus *Microsporum* have been isolated (Bournerias et al., 1996; King et al., 1996; Porro et al., 1997; Muñoz-Pèrez et al., 2000; Galhardo et al., 2005; Nenoff et al., 2007; Narang et al., 2012).

Among the atypical lesions, poorly demarcated areas of hyperkeratosis have been described, which present few signs of inflammation. They are called anergic lesions and may mimic other dermatoses such as seborrheic dermatitis or xerodermia (Kaviarasan et al., 2002).

Dermatophytosis is a source of considerable morbidity and predisposes the patient to other types of infection, as they generate a skin barrier impairment. Moreover, in HIV-positive individuals, rapid recognition and treatment of these superficial mycosis are essential to prevent the development of a more severe or even invasive disease (Burkhart et al., 2003; Lowinger-Seoane et al., 1992). It is important to know the different clinical presentations that the tinea can assume in this group of patients, in correlation with etiologic agents.

Thus, this study aimed to describe the clinical presentation and etiologic agents of the dermatophytosis in patients with HIV infection.

2. Materials and methods

HIV-positive individuals treated between February 2012 and January 2013 at Correia Picanço Hospital and Clinics Hospital, reference centers for monitoring HIV/AIDS in Recife, Brazil, were evaluated by dermatologic examination. Those who had cutaneous or ungual lesions with clinical diagnosis of dermatophytosis were asked to provide written consent before the following tasks were undertaken: (1) interview to obtain clinical and epidemiological data, (2) photographic recording of lesions, and (3) scraping of the epidermis and/or nail injuries to obtain mycological diagnoses. Additional data were obtained by consulting patient records.

Biological samples were transported to the Laboratory of Medical Mycology of the Federal University of Pernambuco, Recife, Brazil. For direct examination, slides with the material were prepared with the addition of 20% potassium hydroxide solution. Fungal isolation culture was performed on Sabouraud dextrose agar (Difco, Sparks, MD, USA) supplemented with chloramphenicol and cycloheximide. Mycological study results were considered compatible with dermatophytosis if hyaline septate mycelian filaments were observed by direct microscopy, associated with the isolation of dermatophytes from the culture. The fungal identification was based on taxonomic characteristics (De Hoog et al., 2000).

3. Results

Of the total 305 individuals in our study, 60 (18.3%) had lesions with clinical hypothesis of dermatophytosis. Of the 60 patients, 20 (33%) had a confirmed initial diagnosis of dermatophytosis through a mycological study. The patients with dermatophytosis had a mean age of 41.9 ± 10.1 years, and only 2 of whom were female. All were already receiving antiretroviral therapy before the diagnosis of tinea.

The clinical evaluation of the patients showed that 70% (14/20) had tinea corporis, 35% (7/20) had tinea unguium, 25% (5/20) had tinea cruris, and 5% (1/20) had tinea pedis. Seven patients presented with two different clinical types of tinea, simultaneously. Among the 17 patients with cutaneous lesions (tinea corporis, tinea cruris or tinea pedis), 8 had a single lesion, 6 had 2 or 3 lesions, and 3 had 6 or more lesions. The clinical subtypes presented by the 14 patients with tinea corporis were tinea circinate in 8 patients and tinea incognito in 1 patient. In 5 patients, the lesions were anergic, characterized by low to no degree of inflammation. Fig. 1 shows the lesions of our patients, illustrating 2 types of tinea corporis (circinate and anergic) that occurred in the study population.

All the patients with tinea cruris had bilateral involvement, and 60% (3/5) presented with associated tinea corporis in the gluteal