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ORIGINAL ARTICLE/ARTICLE ORIGINAL

Fungal interdigital *tinea pedis* in Dakar (Senegal)

Intertrigo inter-orteils fongique à Dakar (Sénégal)

K. Diongue ^{a,*}, M. Ndiaye ^{a,b}, M.A. Diallo ^a, M.C. Seck ^{a,b},
A.S. Badiane ^{a,b}, A. Diop ^a, Y.D. Ndiaye ^a, A. Déme ^a,
T. Ndiaye ^a, O. Ndir ^{a,b}, D. Ndiaye ^{a,b}

^a Laboratoire de parasitologie-mycologie, CHU Aristide le Dantec, BP 5005, Dakar, Senegal

^b Service de parasitologie-mycologie, faculté de médecine, de pharmacie et d'odontologie, université Cheikh Anta DIOP de Dakar, BP 16477, Dakar, Senegal

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Dakar

Summary Fungal interdigital *tinea pedis* (FITP) is the most frequent dermatomycosis in industrial countries. In African tropics, it's a rare motive of consultation and is discovered while complicated. The aims of this article were: to determine the frequency of interdigital *tinea pedis* among overall mycological analysis in our laboratory; to study epidemiological, clinical and mycological aspects of FITP in outpatients attending the Le Dantec mycology laboratory in Dakar. A total of 62 males (60%) and 42 females (40%), mean age: 43.15 years (range: 11–81 years), were received from January 2011 to December 2015 for suspicion of FITP. Skin specimens were taken from all patients for microscopy and fungal culture. The frequency of ITP represents 5.6% (104/1851) among our overall mycological analysis. FITP was confirmed in 68 patients (SPI = 65.38%), mainly located between the 4th and 5th toes and 71 fungal species were isolated (CPI = 68.27%). Among patients with confirmed FITP, there were 38 males (56%) and 30 females (44%). The prevalence was highest in patients between 44 and 54 years (26%). *Candida albicans*, *Fusarium solani* and *Trichophyton interdigitale* were shown to be the most common pathogens respectively for yeasts (39%), non-dermatophytic filamentous fungi (NDFF; 21%) and dermatophytes (11%). So FITP isn't a common reason for consultation in Dakar but its simple parasitic index (SPI) is still very high and dermatophytes formerly the main causative agents are being relegated to third place behind yeasts and NDFF.

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* Corresponding author.

E-mail address: khadimase@gmail.com (K. Diongue).

MOTS CLÉS

Intertrigo inter-orteils ;
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Moisissures ;
Dakar

Résumé L'intertrigo inter-orteils fongique, causé par des champignons microscopiques, est la plus fréquente des dermatomycoses dans les pays industrialisés. En milieu tropical africain, il fait rarement l'objet de consultation et n'est découvert que fortuitement ou lors d'une complication. Les objectifs de cette étude sont : de déterminer la fréquence de l'examen mycologique « intertrigo inter-orteils » par rapport à l'ensemble de nos examens mycologiques réalisés au laboratoire ; de décrire les aspects épidémiologiques, cliniques et mycologiques des intertrigos inter-orteils fongiques chez les patients venus au laboratoire de parasitologie-mycologie du CHU Le Dantec de Dakar. Un total de 62 hommes (60 %) et 42 femmes (40 %) avec une moyenne d'âge de 43,15 ans (extrêmes : 11–81 ans) ont été reçus de janvier 2011 à décembre 2015 pour suspicion d'intertrigo inter-orteils fongique. Les prélèvements de squames recueillis chez les patients ont bénéficié chacun d'un examen microscopique direct et d'une culture. La fréquence de l'examen mycologique « intertrigo inter-orteils » représentait 5,6 % (104/1851) de l'ensemble des examens mycologiques réalisés durant cette période. L'origine fongique de l'intertrigo inter-orteils a été confirmée dans 68 cas (IPS = 65,38 %), majoritairement localisé entre les 4^e et 5^e orteils et 71 espèces ont été isolées et identifiées (IPC = 68,27 %). Ces cas étaient confirmés chez 38 hommes (56 %) et 30 femmes (44 %). La prévalence était plus élevée dans la tranche d'âge entre 44 et 54 ans (26 %). Les espèces *Candida albicans*, *Fusarium solani* et *Trichophyton interdigitale* étaient prédominantes respectivement parmi les levures, les moisissures et les dermatophytes. En conclusion, l'intertrigo inter-orteils fongique n'est pas un motif fréquent de consultation à Dakar mais son index d'infestation reste élevé et les dermatophytes qui jusque-là restaient les agents étiologiques les plus fréquents sont en train d'être relégués en troisième position après les levures et les moisissures.

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Introduction

Intertrigo is a fungal or bacterial infection of the interdigital toe-web space [5]. Interdigital *tinea pedis* caused by fungi is benign but can be spread to become embarrassing. It's the most frequent dermatomycosis in industrial countries and persons who do sports are a high-risk population [2]. In African tropical area, it's a rare motive of consultation and is discovered while complicated or fortuitously [9].

The aims of this study were:

- to determine the frequency of interdigital *tinea pedis* among overall mycological analysis in our laboratory;
- to describe epidemiological, clinical and mycological aspects of fungal interdigital *tinea pedis* (FTIP) diagnosed in the parasitological and mycological laboratory of Aristide Le Dantec university hospital in Dakar, from 2011 to 2015 (5 years).

Patients and methods

From January 2011 to December 2015, all patients received in the parasitological and mycological laboratory for suspicion of fungal interdigital *tinea pedis* were included for a retrospective study. A total of 104 patients were included categorized according to age into seven groups (11–21; 22–32; 33–43; 44–54; 55–65; 66–76; > 76). The mean age was 43.15 years (range: 11–81 years).

Specimen collection

Specimens' collections were preceded by alcohol cleaning. Samples of skin scrapings from lesions were collected in sterile Petri dish for direct examination and culture.

Direct examination and culture

A microscopic examination of all specimens was carried out in 20% KOH solution. The specimens were cultured in 2 plates/tube, 1 containing Sabouraud-chloramphenicol dextrose agar and the other containing Sabouraud-chloramphenicol cycloheximide. Cultures were incubated at 22–27 °C and evaluated for growth after 48 h, then once weekly for a month. The specimen was considered positive when microscopic examination and culture were positive. However, as we reported in a previous article [10], an extrapolation of the inclusion criteria in a mold onychomycosis [4] was made to incriminate the non-dermatophytic filamentous fungi and yeasts other than *Candida albicans* in this article.

Identification

Identification of filamentous fungi was based on the speed of growth and especially on the macroscopic and microscopic characteristics of the colonies [7,6,15]. Yeasts were identified with their morphological, physiological (germ tube test) and biochemical (urease test) characteristics [3].

Data analysis

Data collected were analyzed using indicators such as frequency distributions and index. The indexes were calculated using the following formulas:

- simple parasitic index (SPI) is the percentage of fungal interdigital *tinea pedis* confirmed by the total suspicions of fungal interdigital *tinea pedis*;
- the corrected parasite index (CPI) is the percentage of fungal species identified by the number of suspicions of fungal interdigital *tinea pedis*.

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