

A THREE-YEAR OBSERVATION OF SKIN MYCOSES AT THE PADUA UNIVERSITY DERMATOLOGY DEPARTMENT.

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ABSTRACT

The paper reports on the incidence of skin mycoses and their causal agents in the territory of Padua over a 34-month period of observation.

We observed 332 cases of mycosis (198 females and 134 males, age range 1-81 years), which accounted for 1.47% of the total population of patients presenting to our department. In 174 cases yeasts were isolated (129 cases of *Candida albicans*, 15 of *C. guilliermondii*, 12 of *C. parapsilosis*, 4 of *C. krusei*, 10 of *Rhodotorula rubra*, 2 of *Trichosporon beigeli* and 2 of *Torulopsis glabrata*); in 156 cases were isolated dermatophytes (52 cases of *Microsporum canis*, 45 of *T. mentagrophytes*, 17 of *Epidermophyton floccosum*, 24 of *Trychophyton rubrum*, 4 of *T. verrucosum*, 4 of *T. equinum*, 4 of *T. interdigitalis*, 2 of *M. ferrugineum*, 2 of *T. violaceum*, 2 of *M. audouinii*); in 2 cases were isolated moulds (*Aspergillus fumigatus*).

Our study confirms a high incidence of dermatophytoses due to *M. canis*, which was isolated most frequently in tinea corporis (36 cases 48,65%) and tinea capitis (14 cases 58,30%), and never detected in tinea pedis or tinea unguium. *E. floccosum* was a frequent finding in tinea cruris (4 cases 66,70 %) and also occurred in 2 cases of tinea capitis. Cases of yeast-borne pathologies are also mentioned: these were in association with Gram-negative bacteria in 18.4% of cases, while in 21.8% it proved impossible to detect any predisposing cause of the infection.

KEY WORDS

mycoses, yeasts, dermatophytes, Microsporum canis, Trychophyton mentagrophytes

INTRODUCTION

In recent years there has been observed an increase in mycotic pathologies caused by zoophilic species with respect to the so-called anthropophilic species (1,3,5,6,13,16-19,21,22,24). Among the zoophilic dermatophytes, in particular, the *Microsporum canis*

seems to be the mycete progressively spreading, (1,4,7,16,19,21,22).

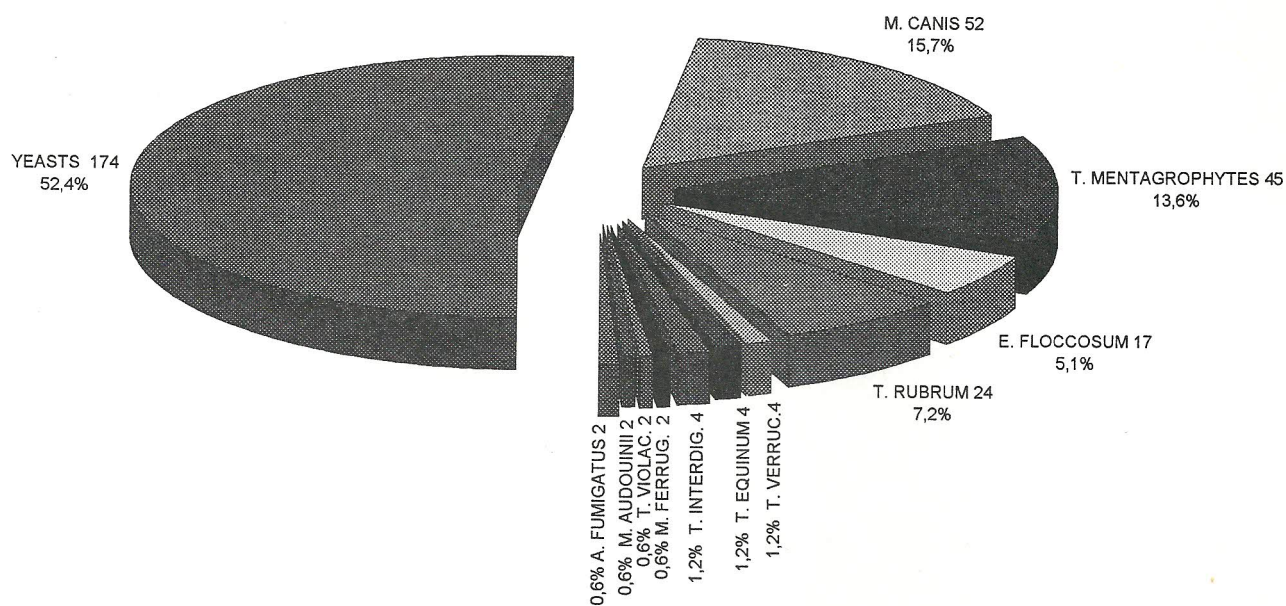
The epidemiological study of pathologies due to *Candida* species, and yeasts in general, is hindered by the fact that "minimal" clinical conditions go unobserved and unreported and also by the fact that in some lesions the yeasts may have a dubious

saprophytic-pathogenic role (10,11,16).

In addition, yeast-induced pathologies are known to depend on various predisposing environmental and behavioral factors and/or on local and systemic pathological conditions (16).

MATERIALS AND METHODS

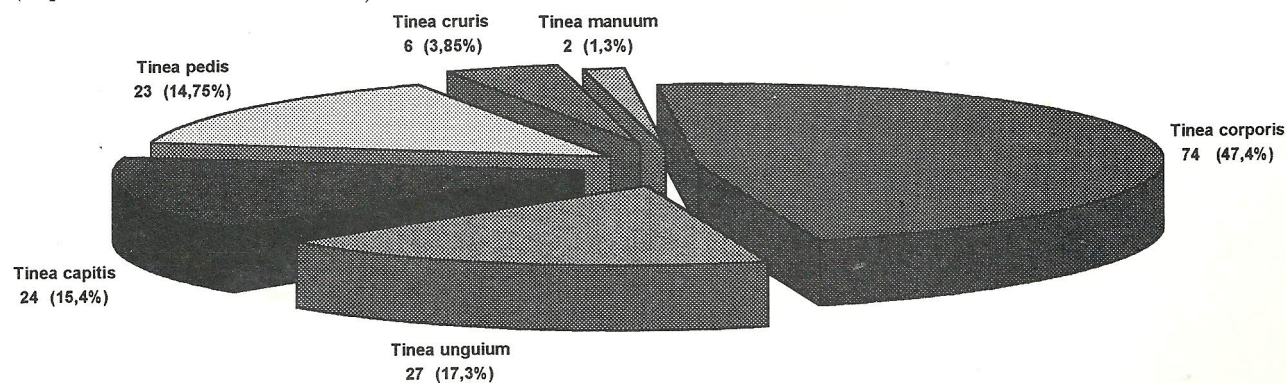
All patients presenting with skin lesions typical or suggestive of mycoses underwent mycological investigations, regardless of their sex or age. Material



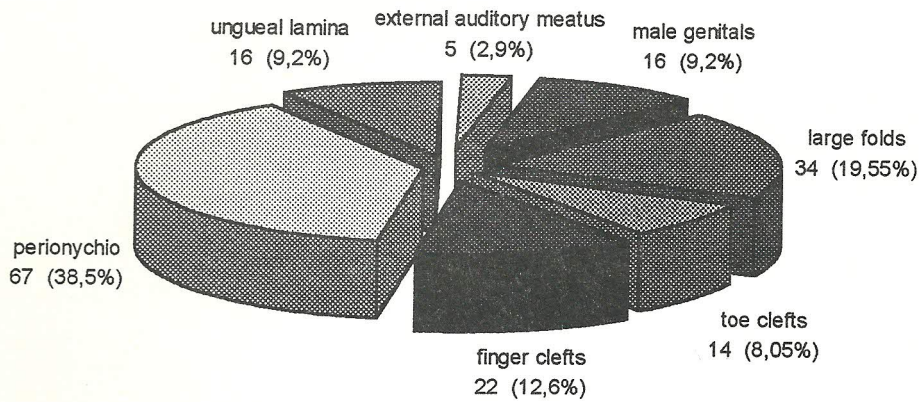
Graph 1. Fungus species isolated at the Department of Dermatology, University of Padua, from September '90 - June '93

In the absence of epidemiological studies on skin mycoses in our territory, this paper reports our observations at the Dermatology Department of Padua University over a period of 34 months (September 1990 - June 1993).

was collected with a curette in the case of glabrous skin or, in the event of a suspect onychomycosis, with nippers and a Volkmann's spoon, taking the sample from the cleavage between healthy and affected skin.



Graph 2. Localization of 156 cases of dermatophytoses observed at the Department of Dermatology, University of Padua, from September '90 - June '93



Graph 3. Localization and incidence of 174 cases of yeast pathology observed at the Department of Dermatology, University of Padua, from September '90 - June '93

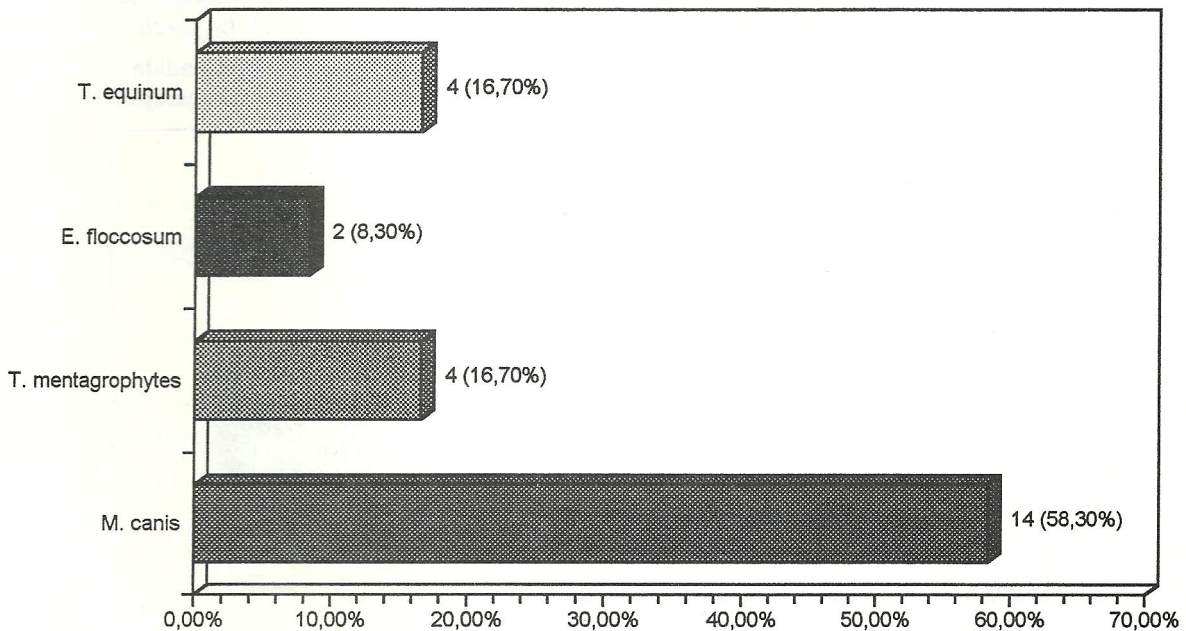
Direct microscopic examination was performed by clarifying the material with potassium hydroxide at 20% or 40%, plain or with the addition of Parker blue stain.

Culture was performed on Sabouraud Dextrose Agar + CAF medium (Biolife), Dermatophyte Selective Medium (DTM) and Candida Agar (Biolife).

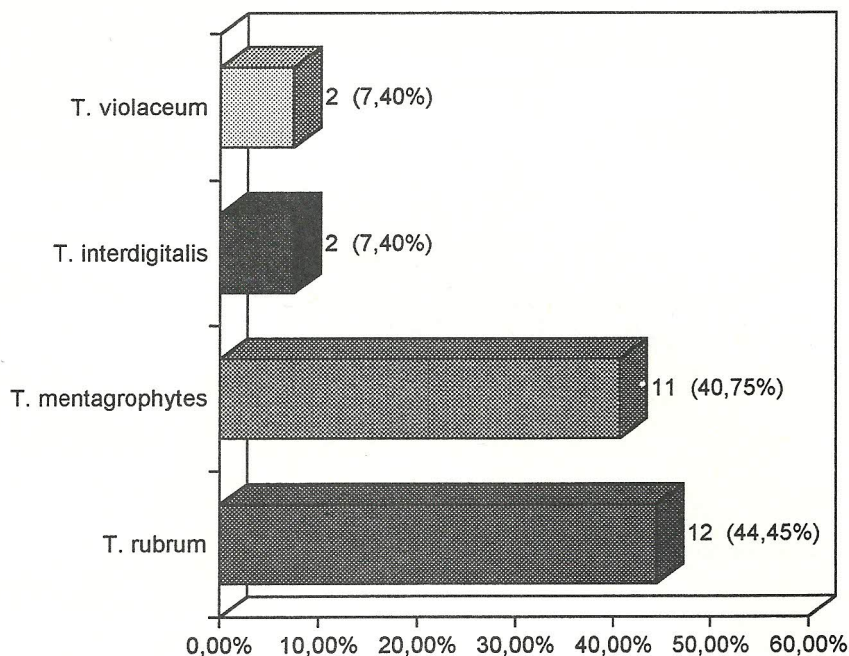
Yeasts were identified using an auxonographic method (BioMérieux); for the dermatophytes, diagnosis

of the species was based on the macro- and microscopic features of the colonies.

In cases of suspect yeast-induced pathologies, the sample material was also used to prepare cultures on selective mediums for Gram-negative bacteria and patients underwent further clinical and laboratory tests to identify any factors predisposing them to infection.



Graph 4. Incidence of several species of dermatophytes in 24 cases of tinea capitis observed at the Department of Dermatology, University of Padua, from September '90 - June '93



Graph 5. Incidence of several species of dermatophytes in 27 cases of onychomycosis observed at the Department of Dermatology, University of Padua, from September '90 - June '93

This paper did not deal with mucosal pathologies or pityriasis versicolor.

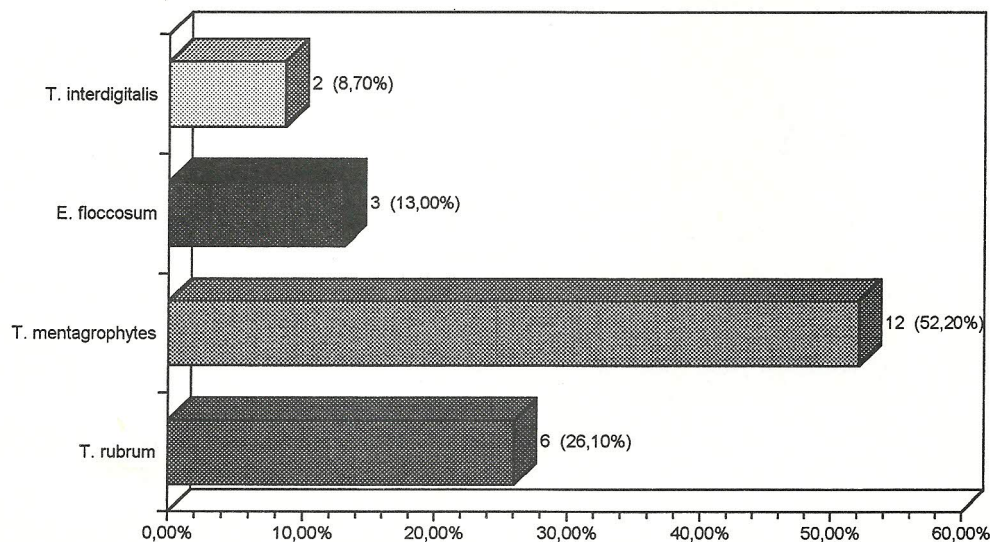
RESULTS

In 34 months, we observed 332 patients with mycosis (198 females and 134 males, age range 1-

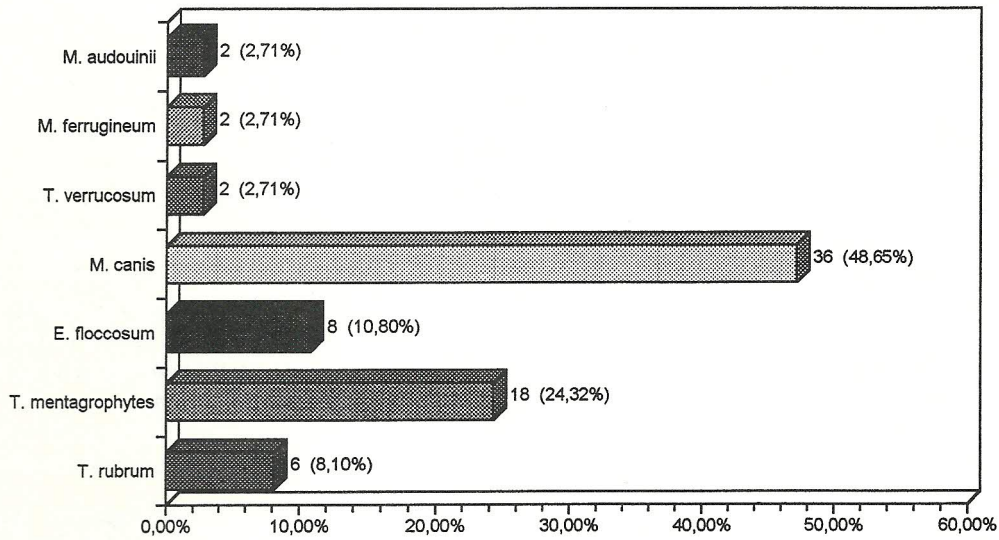
81 years), which accounted for 1.47% of the total population of patients presenting to our department.

The fungus species isolated, the number of cases for each species and the corresponding percentages of incidence are reported in graph 1.

The yeasts (129 cases of *Candida albicans*, 15 of *C. guilliermondii*, 12 of *C. parapsilosis*, 4 of *C.*



Graph 6. Incidence of several species of dermatophytes in 23 cases of tinea pedis observed at the Department of Dermatology, University of Padua, from September '90 - June '93



Graph 7. Incidence of several species of dermatophytes in 74 cases of tinea corporis observed at the Department of Dermatology, University of Padua, from September '90 - June '93

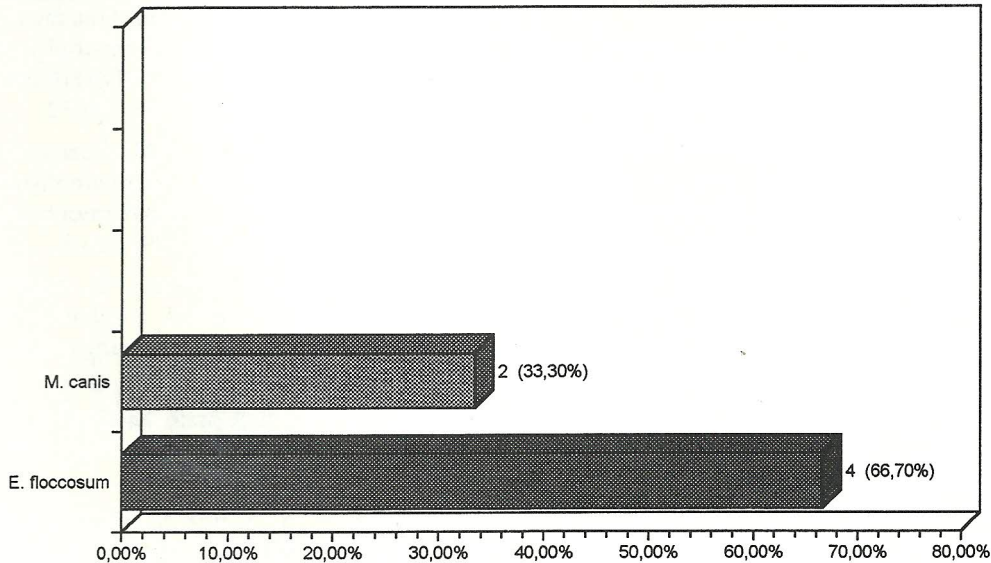
krusei, 10 of Rhodotorula rubra, 2 of Trichosporon beigelii and 2 of Torulopsis glabrata) are considered together.

Graph 2 indicates the sites involved by dermatophytes (52 cases of M. canis, 45 of T. mentagrophytes, 17 of E. floccosum, 24 of T. rubrum, 4 of T. verrucosum, 4 of T. equinum, 4 of T. interdigitalis, 2 of M. ferrugineum, 2 of T. violaceum, 2 of M. audouinii).

Graph 3 illustrates the sites where yeasts were detected, together with the corresponding incidence.

Graphs 4-8 report the incidence of the single dermatophytes at the various sites.

The yeasts were found in association with Gram-negative bacteria in 30 (17,24%) cases (15 of tinea unguium, 8 of tinea pedis and 7 of tinea cruris). Factors predisposing patients to infection at various sites, such as systemic or local pathologies and the type of job, were detected - alone or in various combinations - in 136 (78,16%) out of 174 patients in whom yeasts were isolated (Table 1).



Graph 8. Incidence of several species of dermatophytes in 6 cases of tinea of large folds at the Department of Dermatology, University of Padua, from September '90 - June '93

DISCUSSION

Our experience confirms that tinea corporis is the most frequently observed dermatophytosis (2,6,8,13,18,19,21,22) and that *M. canis*, which is a zoophilic dermatophyte, is the pathogenic agent most often involved (1,4-7,19,21-23).

Like other reports in the literature, our experience indicates that while *M. canis* is the species most often detected in tinea corporis and tinea capitis, it is never found in tinea pedis and tinea unguium (2,8,16,18,20,21). In tinea cruris, moreover, the most frequent causal agent was not *M. canis*, but *Epidermophyton floccosum* (3,6,10,15-18, 21-23).

It is also worth adding that our finding of two cases of tinea capitis due to *E. floccosum* confirms recent reports in the literature (7,10,15,23) which

suggest that this dermatophyte is capable of parasitism on hair in vivo.

As for the yeasts, these were isolated in 52.4% of the patients considered. However, it does not seem feasible to express any unequivocal opinion as to their pathogenic role, considering that they were found in association with Gram-negative bacteria in 17.24% of cases and also that we found no causes predisposing their infection in 21.84% of cases.

The role of moulds in human pathology is doubtful (16), except for otomycoses: since in our experience *A. fumigatus* was isolated in ungueal lesions, it was not considered in this study.

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