

## Folliculitis by *Malassezia* sp., An epidemiological study in Dominican Republic

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### Abstract

*Malassezia*'s folliculitis is a pathology characterized by the presence of papules and pustules in which *Malassezia* sp. can be isolated. This is indistinguishable from *Candida* sp. folliculitis, acne vulgaris, acneiform reaction, and some bacterial folliculitis so it may be underdiagnosed. The objective of this study was to characterize the epidemiology of *Malassezia* folliculitis through a retrospective cross-sectional study from 2009 to 2012 at the Institute Dermatological and Skin Surgery "Prof. Dr. Hubert Bogaert ", Dominican Republic. It was observed that the disease is more common in women, the most prevalent age group is 21 to 30 years, concomitant pathology is more often associated with tinea versicolor, the evolution time is less than 1 year, the most often associated site is the back. The use of Gram stain and culture is recommended to fully establish the diagnosis.

### *Malassezia* sp., Gram stain, folliculitis.

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## Introduction

*Malassezia* folliculitis is a pathology characterized by papules and pustules chronic. [1,2] is associated with immunocompetent patients and can also be found in patients immunosuppressed, [3] considered a benign pathology associated with lipophilic fungus *Malassezia* sp, this entity is not distinguishable from a common acne, acneiform reaction and some bacterial folliculitis, usually in some cases it is subdiagnosed. [4] This condition can be complicated by causing fungemia use catheter. [5,6] Clinical lesions are frequently located in the trunk, abdomen and extremities. This ringworm occurs frequently in tropical and temperate countries. Among the risk factors and are occlusion moisture and antibiotics, corticosteroids, presence of malignancies, transplant and diabetes. [7]

The genus *Malassezia* was described and characterized by Eichsted and Sluter in 1846 and 1847 respectively. The taxonomic grouping was resolved by Guillot et al., In 1995. [8]

The yeast *Malassezia* is part of the normal microbiota skin, the etiologic agent is recognized as the cause of tinea versicolor, and plays a role in the development of seborrheic dermatitis, confluent and reticulated papillomatosis, atopic dermatitis and type injuries psoriasis. [9] currently 14 known species of *Malassezia*: *Malassezia furfur*, *M.*

*Pachydermatis*, *M. sympodialis*, *M. globosa*, *M. slooffiae*, *M. Restricted*, *M. obtusa*, *M. dermatis*, *M. japonica*, *M. yamatoensis*, *M. nana*, equine *M.*, *M. caprae*, *M. cuniculi*. The requirement for its development in the skin is the presence of lipids, and for obtention in culture media (modified Dixon) is used commonly glycerol agar supplemented with Tween 20, 40, 60 and 80 (to achieve their isolation and identification). [10,11]

The presence of *Malassezia* in pustular lesions can be demonstrated using KOH 10% of chlorazol black, white calcoflour or Gram stain. In this case unipolar budding yeast are observed. [12,13]

Among the various treatments used in the case of *Malassezia* folliculitis selenium sulfide, econazole, clotrimazole, miconazole and ketoconazole are in the case of patients immunocompetent. [14] For neutropenic patients treatment often fails, Hair and Cermak (2004) report the use of ketoconazole orally without recurrence of injury in the event of a neutropenic patient. [10]

## Methodology

A retrospective cross-sectional study was conducted in the department of medical mycology Dominican Dermatological Institute and Skin Surgery "Prof. Dr. Hubert Bogaert Diaz, "in which patients who came to present disseminated pustular lesions were analyzed. Patients were evaluated to determine the presence of *Malassezia* sp. lesions, achieving found 22 cases of immunocompetent patients from 2009 to 2012. Gram staining was used to establish the presence or absence of unipolar budding yeast.

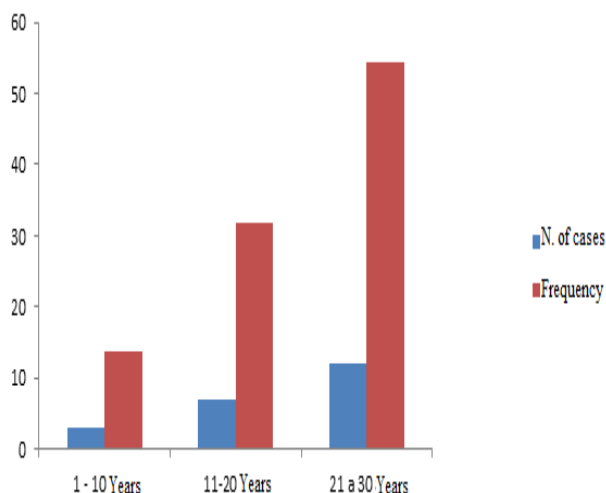
## Results

Of the 22 cases it found that most were female (63.64%).

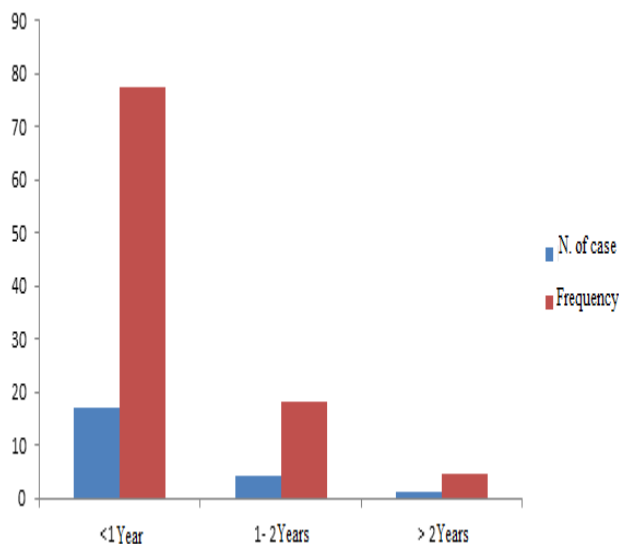
Sex	N. of cases	Frequency
Female	14	63.64
Male	8	36.36

**Table 1** Sex of patients

As for the age group folliculitis by *Malassezia* sp it is observed. It predominates 21-30 years (54.55%), followed by 10 to 21 years (31.82%) and 0-10 years (13.64%). The average age was 19 years.

**Graphic 1** Age Group

As for the time of evolution, most patients consulted before 1 year (77.27%), the average development time of six months.

**Graphic 2** Time evolution

As for the distribution of lesions by *Malassezia* sp., It was found that most dominated back sole associated anatomical site and others like chest and arms.

Anatomic site	N. of cases	Frequency
Back	8	36.36
Back, chest	5	22.73
Back, chest, arms *	4	18.18
Arm, back	3	13.64
Arm, chest	1	4.55
Chest, face	1	4.55

\* Three anatomical sites

**Table 2** Anatomical Site

Of the 22 cases analyzed it was found that in 15 of them there was no evidence of associated disease, 3 of them had tinea versicolor, and found that there was 1 case of hypertension, 1 of atopic dermatitis, seborrheic dermatitis 1 and 1 with onychomycosis tinea pedis.

Comorbidities	N. of cases	Frequency
Missing	15	68.18
versicolor	3	13.64
Hypertension	1	4.55
Atopic dermatitis	1	4.55
Seborrheic dermatitis	1	4.55
Onychomycosis and tinea pedis	1	4.55

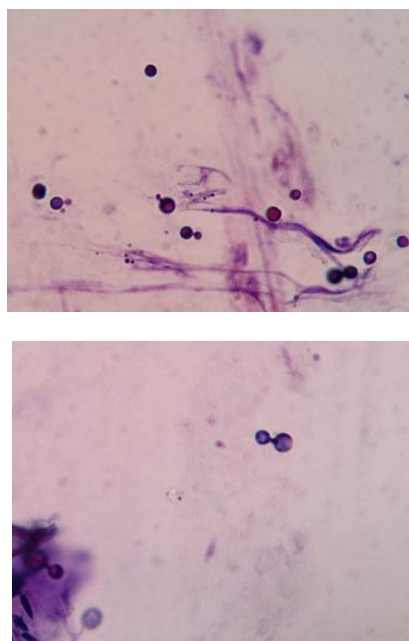
Antifungal most commonly used in these cases was orally itraconazole (81.82%), followed by oral ketoconazole (18.18%).

Antifungal	N. of cases	Frequency
itraconazole V.O	18	81.82
topical ketoconazole	4	18.18

**Tabla 4** Antifungal used



**Figure 1** Clinical presentation of folliculitis by *Malassezia* sp.



**Figure 2** Observation of yeast *Malassezia* sp. Gram stain

## Discussion

Regarding diagnosis of *Malassezia* folliculitis sp. one of the most common problems is the underdiagnosis that arises due to the lack of experience in identifying the injuries as pustules produced in this disease are very similar to those observed by acne, *Candida* sp. and acneiformes.[4,15] reactions In the present study a compilation of cases of folliculitis by *Malassezia* sp performed. in order to establish the epidemiology of the disease.

As for sex a higher frequency in women was observed 2: 1 as has been described in other studies such as that conducted Abdel et al. in Saudi Arabia in 1995.14 Other studies such as that conducted by Guzman et al. in Mexico in 2005, where more frequent point men.[12]

When performing mycological study and observe the gemantes yeast, you should be careful in establishing a diagnosis with *Candida* sp. since in both cases it is yeast. Among the important features that differentiate folliculitis by *Malassezia* sp. folliculitis respect to *Candida* sp. location is, in many cases folliculitis *Candida* sp. It is located in hairy skin while *Malassezia* folliculitis is located on the back and pecho.16 In our study we found the presence of lesions predominantly back (49%), of which in 22% of cases have spread to the abdomen and chest (thorax).

In the present study we found the presence of folliculitis most frequently in adults (21-30 years), which correlates with the study of Guzman et al. in Mexico in 2005, which it states that the average age is 28 years in cases *Malassezia* folliculitis sp.[12]

In this study patients attended the dermatology clinic in term of under 1 year of getting the problem time. So the presence of diseases associated with *Malassezia* folliculitis also evaluated sp., And found that the disease was more tinea versicolor association with 13.64% in a study by Abdel et al. in 1995, it was established that at a frequency of 17% was no association between *Malassezia* folliculitis sp. and tinea versicolor. [14]

It is important to note that the climate in which these cases could be identified was warm as temperatures on the island of Dominican Republic, fluctuate between 25-35 ° C, this correlates with what was said by Guzman et al., Who established the climate hot as a predisposing factor in cases of *Malassezia* sp.[12] folicultis

It has been observed in vitro sensitivity of *Malassezia* sp. ketoconazole and itraconazole. It also has a variability with respect to fluconazole, bifonazole, econazole, miconazole, clotrimazole and new azole as albaconazole and voriconazole, in the Dominican Dermatology Institute and Skin Surgery "Prof. Dr. Hubert Bogaert Diaz "the antifungals ketoconazole and itraconazole were selected. Itraconazole being the most frequently used (81.82%).

## References

- [1] Crespo V, Delgado V. *Malassezia* species in skin diseases. Curr Opin Infect Dis 2002; 15: 133-14
- [2] Arenas R. *Micología médica ilustrada*. 2a ed. Interamericana McGraw-Hill. México. 2011
- [3] Dokos C, Pana Z, Tragiannidis A. *Malassezia* species: A rare cause of invasive fungal infections in immunocompromised patients. Curr Fungal Infect Rep 2011; 5:18-22.
- [4] Farris P, Murina A. *Malassezia* folliculitis. In: Zeichner J. Acneiform eruptions in dermatology. A differential diagnosis. Nueva York: Springer 2014; 9: 59-65.
- [5] Carrillo A, Rojas F, Tur C, De los Ángeles M, et al. In vitro antifungal activity of topical and systemic antifungal drugs against *Malassezia* species. Mycoses 2013;56:571-575
- [6] Lagos A, Armas A, Ponce R, Ariaza J, Bonifaz A. Folliculitis por *Malassezia globosa* en un paciente críticamente enfermo. Deramamol Rev Mex 2014; 58(1): 465-470.
- [7] Yu J, Lee S, Son S et al. Steroid acne vs. pityrosporum folliculitis: the incidence of *Pityrosporum ovale* and the effect of antifungal drugs in steroid acne. Int J Dermatol 1998; 37: 772-777.
- [8] Ojeda-Vargas M, Monzon-Moreno C, Rodríguez J, et al. Folliculitis en un paciente sometido a transplante renal. Enferm Infecc Microbiol Clin 1995; 13: 637.
- [9] Karhoot J, Noaimi A, Ahmad W. Isolation and Identification of *Malassezia* Species in Patients with pityriasis versicolor. The Iraqi Postgraduate Medical Journal 2012; 11: 724-30. Cabello I, Cermeño J. Folliculitis por *Malassezia spp* en un paciente inmunocomprometido. Dermatol Venez 2004; 42(1):18-20.
- [10] Nakabayashi A, Sei Y, Guillot J. Identification of *Malassezia* species isolated from patients with seborrheic dermatitis, atopic dermatitis, pityriasis versicolor and normal subjects. Med Mycol 2000; 38(5): 337-41.

- [11] Guzman A, Chanussot C, Arenas R, Cubilla E, De Silva D. Folliculitis por *Malassezia sp.* Estudio retrospectivo de 55 pacientes inmunocompetentes. DCMQ 2005; 3(4): 325-330.
- [12] Sanchez D, Hostalet F, Huerta M, Hernanz J. Folliculitis por *Malassezia*. *Acta Pediatr Esp* 2004; 62(10): 473-475.
- [13] Abdel-Razek M, Fadaly G, Abdel-Raheim M, et al. *Pityrosporum (Malassezia)* folliculitis in Saudi Arabia: diagnosis and therapeutic trials. *Clin Exp Dermatol* 1995;20:406-409.
- [14] Recio C, Pique E, Lluch J et al. Folliculitis por *Candida* en usuarios de drogas por vía parenteral. *Enferm Infecc Microbiol Clin* 2003; 21 (7): 386-390.
- [15] Carrillo-Muñoz AJ, Rojas F, Tur-Tur C, De los Ángeles Sosa M, et al. *In vitro* antifungal activity of topical and systemic antifungal drugs against *Malassezia* species. *Mycoses* 2013; 56: 571-575.
- [16] Giusiano G. *Malassezia*. Estado del conocimiento y perspectivas en su estudio. *Rev Argent Microbiol* 2006; 38: 41-48.