Prevalence of *Malassezia* sp. in young adults in Coimbatore region

Sumathi M¹, Lali Growther²
c

¹.Research Scholar, Hindusthan College of Arts and Science, Coimbatore, India
².Hindusthan College of Arts and Science, Coimbatore, India

cCorresponding author: Hindusthan College of Arts and Science, Coimbatore, India; Email: lalijps@gmail.com

Publication History
Received: 23 September 2014
Accepted: 10 October 2014
Published: 1 November 2014

Citation
Sumathi M, Lali Growther. Prevalence of *Malassezia* sp. in young adults in Coimbatore region. *Discovery Science*, 2014, 10(22), 6-7

ABSTRACT

*Malassezia* sp. is the causative agent of dandruff, which is the most commercially, exploited disease by the cosmetic industry. This study is aimed at the isolation of the different species of Malassezia from young adults in Coimbatore region. The predominant species isolated was *M.symbodialis*.

Key Words: Malassezia, dandruff

1. INTRODUCTION

Dandruff and seborrheic dermatitis are common hyperproliferative scalp disorders associated with *Malassezia globosa*. Dandruff occurs in atleast 40-50% of the general population and with a higher prevalence in tropical countries like India. Despite the global distribution, limited research has been conducted to date concerning the pathogenesis of *Malassezia* yeasts. The flakes on the scalp can be an embarrassing situation and is the most exploited disease by the cosmetic industry (Ranganathan and Mukhopadhyay, 2010). Its prevalence and severity is greatest in young men. Although a variety of antifungal agents are available in the market for the treatment of dandruff, yet complete control is far from the reach. The available products and drugs are unable to prevent recurrence. The daily use of many shampoos makes hair dull and the chemical contents have their own negative effects. Thus the present study is aimed to isolate and identify the common *Malassezia* species in Coimbatore region and study of their antibiotic sensitivity pattern.
2. MATERIAL AND METHODS

Sample collection
A total of thirty samples were collected. Sharp and sterile forcesps was used to detach the hair and scalp sample from individuals. The Scalp region was first washed with 70% ethanol, followed by scraping. The samples were transported in White papers.

Direct Microscopy examination
A drop of 10% potassium hydroxide was introduced onto a slide containing the sample and covered with cover slip. The slides were viewed using 40X objective lens (Kindo et al., 2004).

Isolation and Identification of Malassezia Species
The samples were inoculated onto Sabouraud’s dextrose agar plus Olive oil and Dixon agar medium. The plates were incubated at 32-34 °C for at least two weeks. The species was confirmed by using Lactophenol cotton blue staining and Biochemical tests like Catalase Test, Esculin hydrolysis, Urease activity, Utilization of Tween 20, 40, 60, 80 and Cremophore EL and growth at different temperatures like 32, 36 & 40°C.

3. RESULTS AND DISCUSSION

Isolation of Malassezia species

a) Direct microscopy
Direct microscopy that shows the typical mixture of globose blastoconidia and pseudomycelia coupled with mycelia in the form of “sphagetti” indicates the most identifiable difference of M. globosa from the other species of Malassezia (Cheesbrough, 2000; Crespo et al., 2000; Kindo et al., 2004). Cells of M. symbodialis were Oval or globosal (1.5-2.5 by 2.5-6.0um). Among the thirty samples studied, 28 samples showed the presence of Malassezia symbodialis and 2 samples were positive for Malassezia globosa.

b) Cultural Characteristics
After 7 days at 32°C on Dixon Agar, single colonies are raised, wrinkled to cerebriform, 3-4 mm in diameter, rough and brittle, pale yellowish, shiny or dull, and with the margin slightly lobate. In primary cultures, colonies are surrounded by an abundant precipitate, as in species of the M. sympodialis complex. Cells are spherical, 2.5-8 mm in diameter, and budding is monopolar on a narrow base. In contrast to M. furfur, this micromorphology is a stable character in M. globosa. Colonies of M. symbodialis were glistening, smooth, flat or with a slight central elevation. Growth of both the species occurred at all the different temperatures studied except M. globosa that was unable to grow at 40°C.

c) Biochemical Characteristics
Malassezia globosa has a strong catalase activity and lacks β-glucosidase expression. Growth is limited at 37°C, and no growth occurred with individual lipid supplements. Due to absence of good growth with individual lipid supplements, and lack of β-glucosidase activity, the species is easily recognized morphologically by its cerebriform colonies and spherical cells. M. symbodialis were catalase positive, urease positive and esculin positive. M. symbodialis was able to utilize Tween 40, 60 and 80. Malassezia symbodialis was the predominant species which shows oval to globuse appearance. This corresponds with the work of Crespo et al.2000, Kindo et al, 2004 and Khosrave et al., 2009 who worked independently in South India on Pityriasis versicolor caused by different Malassezia species. Thus this study shows that M.symbodialis is the predominant species in Coimbatore region and furteth studies are warranted in the susceptibility pattern of these yeasts.

REFERENCES