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Isolation And Identification Of The Fungi Found In Children Hair In Benghazi City

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Abstract

TC is a dermatophytosis of the scalp hair follicles and the skin. It is a contagious disease and predominantly affects preadolescent children.The study was done to evaluate the prevalent pattern clinical of and to find epidemiological factors influencing their occurrence. The study was carried out from October to November2011 in Benghazi and considered the age, sex and contact history factors. A total of 101 children, in age group of 2-12 years were included in this study, and all the children were from Benghazi area. Direct microscopic examination and mycological culture were done for all cases. Majority of patients were two males in 11and 12 years age group. They gave history of family member with no tinea capitis. Direct microscopy with KOH and lactophenol cotton blue was found to be help in the diagnosis. Positivity of culture was observed in 2 cases (2.0%) of males and Micosporumcanisthe species was isolated, followed by Candida spp 24 (23.8%) and Candida albicans 21(20.8%). It is beneficial to do both direct microscopy with KOH, Lactophenol cotton blue and culture in all cases of tinea capitis.

Key words*: Tinea capitis; dermatophytosis;mycological.*

INTRODUCTION

(TC) is fungal infection of the scalp, hair follicles and hair shafts, especially common in pediatric population and under tropical conditions.[47,48] The dermatophyte colonize the hair and outer layer of epidermis and grow on keratin. These fungi have the capability to produce keratinase, which allows them to metabolize and live on human keratin like skin, nails and hairs.[1]The infection caused by dermatophyte (species of fungi belonging to genera Trichophyton, Microsporum or Epidermatophyton) are referred to as Tinea.[11]Adults are only rarely affected. This age difference has been attributed to the higher content of fungi static fatty acids in the sebum after puberty.[84]The

higher incidence in boys may be due to the fact that male children had shorter hair and spores reached the scalp easily. The most common factorsaffecting the distributionand transmission of dermatophyte infections are climatic condition, general hygiene and animal contact.[8, 9]Depending on their habitat, They can be categorized as geophilic, zoophilic and anthropophilic, and all three species can infect human scalp.[4,19]The source of infection by close contact with fomites.

Dogs and cats are also frequently infected with fungi that cause wring worm in children.[1] The organisms responsible for TC can be cultured from hair brushes, combs, caps, pillow covers, theatre seats and other fomites.[11]The disease can also transmitted from an infected child to other children through close contact at schools.[85]

An early diagnosis is important to prevent transmission between children, especially sibling, and also to avoid possible scarring and permanent hair loss.Aims of study are to survey the dominant dermatophytes fungi which growing on hair children, identification and classification the dermatophytes that infected hair children in Benghazi city.

2. MATERIALS AND METHOD

A total number of one hundred and one (101) of children their aged were between comprising 2-12 years, this study over period from October 2011 until November 2011.

2.1Method of data collection: Relative history was taken.

2.2 Method of collection of specimen: The scalp was cleaned with cotton swabs soaked in methylated spirit and scrapings were obtained using a clean sterile scalpel. Each sample of hairs was epilated with the help of forceps in petri dish- box.

2.3 Methods: One hundred and one (101) children from Benghazi Hair stumps and scales were exposed to direct microscopic examination using 10% potassium hydroxide solution and the slide is kept for 10-15 Minutes. Detection type of hair infection (endothrix-ectothrix), septate hyphae and spores of dermatophytes, Lactophenol cotton blue stain used also for detection of species were identified by noting their characteristic features such as the conidia and hyphae. Cultivation on Sabouraud,s Dextrose Agar (with cyclohexamide and chloramphenicol. Chloramphenicol is used for it is antibacterial action and cycloheximide selectively suppresses saprophytic fungi, An optimum temperature of 26 C◦ is maintained. The period required for growth is up to 3-4 weeks.

3. RESULTS AND DISCUSSION

3.1Distribution of children according to the ages:The highest frequency of childrenwas 3 years old (19.8%), followed by 2 years (16.8%) and the lowest age was 11 (3.0%).

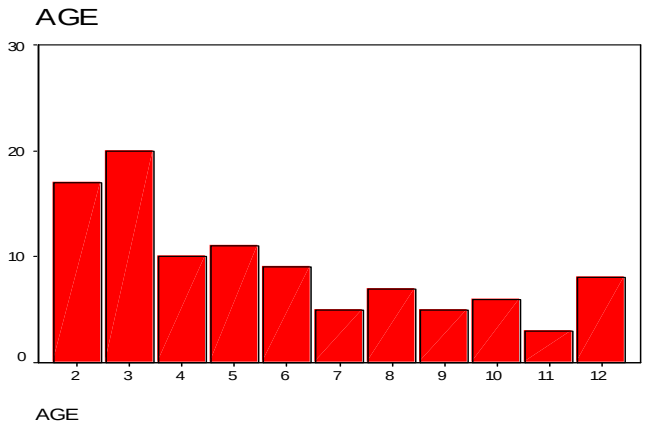

Figure1: **Distribution ofchildren according to the age group**

3.2Distribution of fungal growth according to the ages.

According to the age, the highest frequency was 3 (11%) with no growth and the lowest was 7 and 11(1.0%) respectively, *Candida*spp, the highest frequency age was 6 (5.9%) and the lowest age was 8,8,11 and12 (23.8%) respectively, the highest age growth with *Candida albicans* was 10 (4.0%) and the lowest was 12 (1.0%) ,11 and 12years 1(2%) respectively with*Microsporiumcanis*.

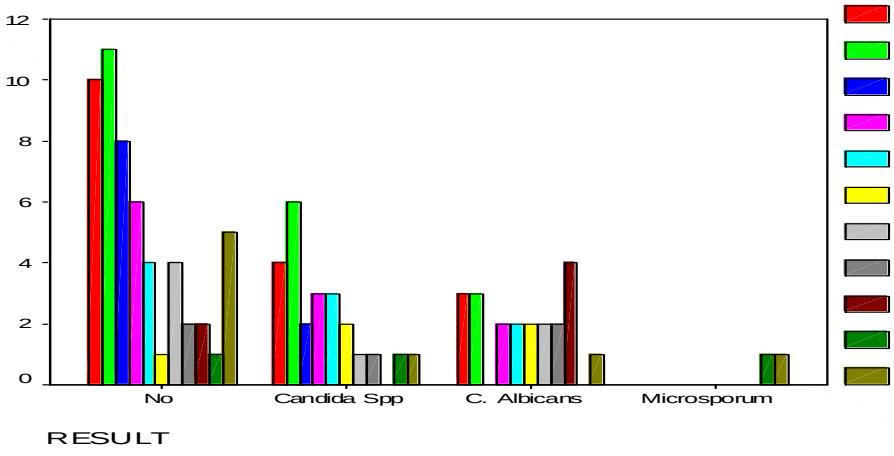

Figure 2: Distribution of fungal growth according to the age group

3.3 **Distribution of fungal growth according to position contact with source of infection:**According to contact with animals, children with no fungal growth result was 9 child (8.9%) while *candida*spp 6 (5.9%), *candida albicans* 8 (7.9%) and *Microsporiumcanis* 2 (2.0%).

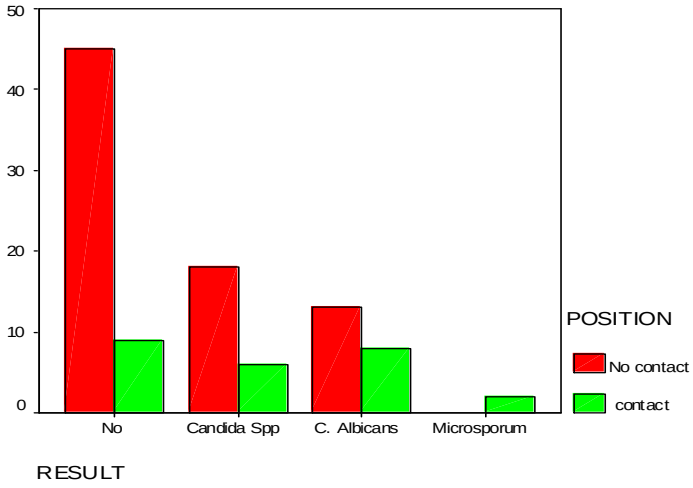

Figure 3: Distribution of fungal growth according to position contact with source of infection

3.4Comparison between the ages based on the contact with the source of infection:

The highest age contact with source of infection was 12 (5.0%) while the lowest was 6, 9 and 11 years(1.0%) respectively

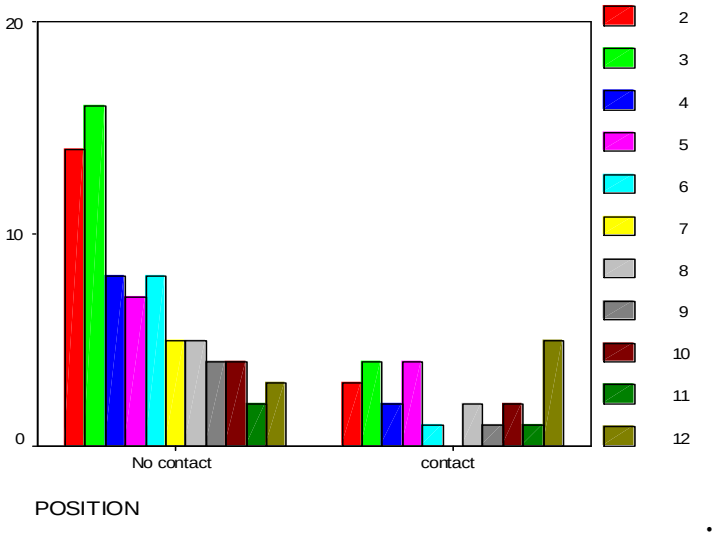

Figure 4: Comparison between the ages based on the contact with the source of infection

3.5 Comparisonbetween fungal growth and position the contact with source of infection:

Culture with no Fungal growth was high 44 (43.6%) in children with no animal contact and 9 (8.9%) with contact, while fungal growth was 32 (31.7%) with no contact, and 16 (15.8%) with contact.

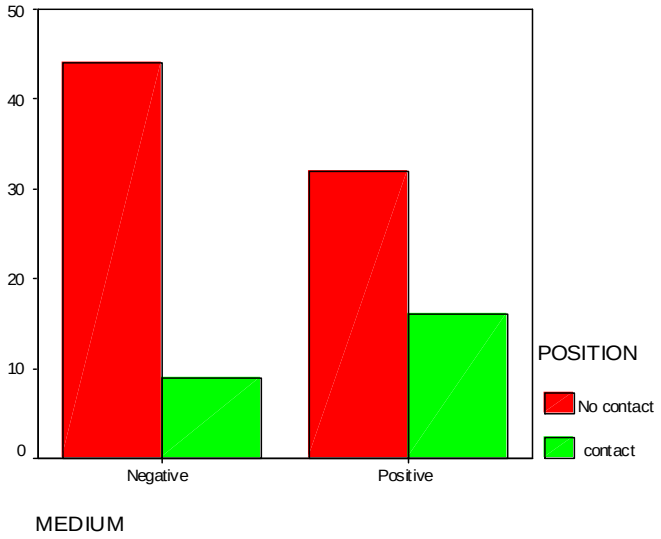

Figure 4: Comparison between fungal growth and position the contact with source of infection.

CONCLUSION

Tinea capitis is a disease of pre pubertal children. The prevalence rates vary widely with place and time; various factors such as socioeconomic status, literacy, overcrowding, personal hygiene, etc play a role in acquiring the infection. Direct microscopic examination is simple, and has easy procedure to perform, and has positive rates. The culture, *M. canis* was a causative agent isolated. TC infects mainly children and rarely adults, and it is difficult to determine the geographic distribution of dermatophytes. Social behaviors, migration, and quick travelling are factors to geographic distributions of dermatophytosisworldwide. Candida spp and *Candida albicans* were also isolated; these two types don't cause TC. This study shows incidence of TC in children between ages 11-12 and the incidence was in males and not in females. *M. canis* is an important etiologic agent; these findings are in agreement with other studies

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