

communication report**Prevalence of white and black Piedra in the students of Sari guidance schools: A short communication report**

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Abstract

Term Piedra, which means stone in Spanish is used to describe an asymptomatic fungal infection of the hair shaft. Two different varieties of piedra are generally distinguished; white piedra and black piedra. In regard to the lack of any report in Iran and also with consideration to tropical weather and high humidity of northern area of Iran, the authors decided to find the prevalence of this infection among the students of guidance schools through a survey.

Methods: This was a descriptive cross sectional study that was conducted among guidance school students of Sari city-Iran in 2013. Sampling was performed through the taking samples from the different clusters of students. In the beginning check list contain demographic data and several questions related to hygiene and public health situation distributed among students. Then scalp hair and axillary part of subjects were evaluated by examiners. Direct examination was done via slides that were prepared by KOH 20% to observe hyphae or any fungi components. After that, all samples were cultured in Sabouraud's dextrose agar (Merck, Germany) containing chloramphenicol (Merck, Germany) and incubated at 27 degrees of centigrade for four weeks. The samples were seen by medical mycologist every day. Data was analyzed via descriptive tests through the SPSS 18.0. P.value ≤ 0.05 was determined as significant.

Results: Subjects were 1273 (44.3%) male and 1600 (55.7%) female. From the all examined students only 271 (9.43%) students sampled which 224 (82.5%) were female and 47 (17.5%) were male. Out of 271 sampled students no case of piedra was identified. Beside the piedra no other dermatophyte or pathologic fungi were observed by direct examinations.

Conclusion: prevalence of trichomycosis nodularis in the studied area was zero. It sounds very likely that the presence of health centers in the studied areas of Sari, also routine visit of the students by schools nurses and inhabitation in downtown were the reasons for lack of infection by piedra.

key words : Prevalence, Piedra, Students

1. Introduction

Term Piedra, that means stone in Spanish is used to describe an asymptomatic fungal infection of the hair shaft¹. This infection also known as trichomycosis nodularis because of fungal nodular lesions that situated along the hair shaft². Both genders and people of different ages are equally affected¹. This condition caused is regarded as superficial mycosis due to the absence of any immune reactive response by hosts^{3,4}. Two different varieties of piedra are generally distinguished; white piedra and black piedra. This typing related to consistency and color of hair shaft nodules and also etiologic agents that produce them⁵. Piedra hortae typically is the cause of black piedra that produce black firm sand like nodules along the hair shaft⁶. It is mostly seen in countries with tropical conditions such as America, especially South parts and South East Asia⁷.

Although black piedra in most cases were found on scalp hairs but also was seen on hairs of the beard, moustache and pubic area hairs⁶. On the other hand White piedra caused by trichosporon species and was found in countries with temperate weather. Trichosporonasahii, ovoides, inkin and Trichosporonmucoides are the species that cause white piedra⁸. This variety of infection is characterized by white to light brown nodules that may surround the entire hair shaft and this lesion can easily be detached from the hair⁹. Trichomycosis nodularis may lead to breakage and disintegration of hair fiber and through this condition may cause mind disturbance and unrest sense¹⁰. There is no information about the prevalence of this infection in Iran, but in the other places of world different rates have been reported. In regard to what was said and no prevalence rate in Iran and also with consideration to

tropical weather and high humidity of northern area of Iran, the authors of this study decided to find the prevalence of this infection among the students of guidance schools through a survey.

2. Materials and methods

This was a descriptive cross sectional study that was conducted among guidance school students of Sari city-Iran on 2013. Inclusion criteria included all students of guidance schools of Sari city in the same time. Exclusion criteria included students with malignant diseases and being immune-compromised. Sampling was performed through the taking samples from the different clusters of students from the various parts of the Sari city. In the present study, 2873 guidance school students in the different areas of Sari were considered. At first the examiners that were students of medicine and were educated by a dermatologist and a medical mycologist enough to take samples talked to school authorities and then students at class and justified them to participate in the study. A written consent form has been taken from students. Examination of girls and boys was done by a female and a male examiner, respectively. In the beginning check list contain demographic data and several questions related to hygiene and public health situation distributed among students. Then scalp hair and axillary part of subjects were evaluated by examiners (The samples contained scalp hair samples and axillary hair samples) and samples from the suspicious students was taken. All samples were taken by sterile scissors in a sterile condition and were collected in sampling pockets and transferred to medical mycology laboratory (Department of Medical Mycology, Mazandaran University of Medical Sciences). Direct examination was done via slides that were prepared by KOH 20% to observe hyphae or any fungi components. After that, all samples were cultured in Sabouraud's dextrose agar (Merck, Germany) containing chloramphenicol (Merck, Germany) and incubated at 27 degrees of centigrade for four weeks. The samples were seen by medical mycologist every day. Data was analyzed via descriptive tests through the SPSS version 18.0. P. value less than 0.05 was determined as significant.

3. Results

In the present study, 2873 guidance school students in the different areas of Sari were considered ranged in age from 9-14 years and 271 suspected patients sampled. Scalp hairs and axillary hairs; if exist were inspected by examiners in all participants. Subjects were 1273 (44.3%) male and 1600 (55.7%) female. From the all examined students only 271 (9.43%) students sampled which 224 (82.5%) were female

and 47 (17.5%) were male. All the samples were taken from the scalp hairs and no axillary sample was taken because of absence of hairs in that zone. Number of baths each week was asked to discuss about the students public health. For convenience, number of baths per week shown as three ranges: fewer than two times, 2-4 times and more than four times a week. 10.4% of students had bath less than two times a week, 76.4% mentioned 2-4 times and 13.2% had bath more than 4 times a week. Out of 271 sampled students no case of piedra was identified. Beside the piedra no other dermatophyte or pathologic fungi were observed by direct examinations.

3. Discussion:

This survey revealed that the prevalence of trichomycosis nodularis in the studied area was zero. This finding was less than that we had expected in regard to high humidity and tropical conditions of weather of studied places. It sounds very likely that the presence of health centers in the studied areas of Sari, also routine visit of the students by schools nurses and inhabitation in downtown were the reasons for lack of infection by piedra. Mahmudabadi Ali Zarei et al on 2010 studied the prevalence of cutaneous mycosis in the primary schools students in rural area of Ahvaz. The prevalence of dermatophyte in that studied area was zero too. The weather of Ahvaz is warm and humid like Sari and the authors expected more prevalence of dermatophytes¹¹. Fungi are found everywhere and no region is spared by these organisms¹². Tropical weather and humidity are two important factors for infection with dermatophytes. Based upon some studies incidence of trichomycosis nodularis may be influenced by climatic conditions. Both black and white piedra occur mainly in humid tropical and semi-tropical places, but the results of this current study revealed these factors are not determinant factors for occurrence of infection¹³. In another study the prevalence of dermatophytosis among primary school students in the city of Varamin; located in southern area of the Tehran was 0.05%¹⁴. In both of the mentioned studies despite our study, primary schools students of rural area were studied and higher prevalence was expected. Sari is located in tropical and humid climate at north of Iran. Some studies believe factors such as inappropriate hygiene, long hair, exorbitances of hair oil, cultural customs such as tying of veil, especially when performed on wet hair relate to the infection, but the current study indicated no difference between patients with long hair and poor hygiene and those with good health and short hair¹²⁻¹⁵.

Conclusion:

Prevalence of trichomycosis nodularis in the studied area was zero. It sounds very likely that the presence of health centers in the studied areas of sari, also routine visit of the students by schools nurses and inhabitation in downtown were the reasons for lack of infection by piedra. More studies need to be done about piedra in Iran.

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