

Frequency of *Demodex folliculorum* in students with cutaneous folliculitis living in dormitories of Ardabil University of Medical Sciences in 1400-01

Abstract

Background: Ectoparasites are of significant importance in terms of medicine and veterinary medicine. Among the types of human ectoparasites are mites called demodex worm-shaped mange. Demodex affects the hair follicle and follicular and sebaceous glands, especially the face, nose and eyelids, and they are mostly symptomless, but sometimes they are associated with folliculitis, acne, comedones (blackheads) or local keratitis. Among the species of Demodex, the most common species that affect the human skin are *Demodex folliculorum* and *Demodex brevis*.

Aim: The purpose of this study is to determine the prevalence of *Demodex folliculorum* in students with skin folliculitis residing in the dormitories of Ardabil University of Medical Sciences in 2014-01.

Materials and methods: The present study was a cross-sectional descriptive study. After obtaining informed consent from the students living in the dormitories of Ardabil University of Medical Sciences (of both sexes), a simple census sampling of 384 students was done. In order to collect the samples in the dormitory, a permission to enter the dormitory was obtained by the cultural and student vice-chancellor. Other samples were taken with the coordination of students and during their attendance at the medical school in the parasitology laboratory of the medical school of Ardabil University of Medical Sciences. After reading and filling the informed consent form, all students entered the study and also completed a questionnaire including demographic information such as age, sex, place of residence and contact with animals. Questionnaires were coded and the same code was inserted on each person's sample on the slide. Skin samples, including skin chips and pimple contents, were taken from the skin of students with skin folliculitis or comedones (blackheads). The criteria for entering the study was having skin folliculitis or comedones, and considering that factors affecting Demodex have not been shown in previous studies, there will be no specific criteria for exiting the study unless the person had received an effective drug on post lesions. It should be mentioned that the samples were obtained from the lesion by using a disposable scalpel blade or by pressing the boil area or by completely scraping the surface of the skin and completely without invasive

methods. Preparation and clarification of skin samples was done using 10% potassium hydroxide or simple lactophenol or colored lactophenol (lactophenol-azocarmine) in such a way that the skin chip samples or the contents of skin pimples were drained. It was placed on the slide. Then, one or two drops of lactophenol or potash were added to it and left for 5-10 minutes to become clear in the laboratory environment. The skin chips and fat contents in the discharged pimples became clear and faded. The clarified samples were examined under a light microscope with 4x, 10x and 40x magnification. In positive cases, demodexes were photographed using a microscope equipped with a camera. Cutaneous ectoparasites were identified using valid parasitological keys by comparing the parameters described in reliable sources of Demodex identification. Statistical analysis was done using SPSS 24 software. Chi-Square test was used to determine the significant relationship between the prevalence of demodicosis with age, sex, place of residence and history of contact with animals. P-value less than 0.05% was considered significant.

Results: In this research, 384 samples were collected from students suffering from folliculitis or skin comedone living in the dormitories of Ardabil University of Medical Sciences in 2014-01. Of these, 268 were men and 116 were women. Then the samples were examined using parasitology methods. In this study, 21 people, 5.5% of the studied students were positive for demodex folliculorum ectoparasite infection. The results of the age study show that the number of cases of demodex infection in the 20-year-old age group was higher than other ages. Also, the results of this study showed that demodex contamination is almost equal between men and women, as well as between students living in cities and villages. Statistically, there was no significant difference between the investigated factors (age, sex, place of residence and history of contact with animals) ($P>0.05$).

Conclusion: In the present study, it was found that the level of demodex contamination is highly related to age, and demodex contamination is relatively low in students who are teenagers and young adults.

Key words: ectoparasite, mange or mite, demodex folliculorum, skin folliculitis