

Prevalence of scabies and pediculosis in Ghezel Hesar prison

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ABSTRACT

Background: Pediculosis and scabies are infectious diseases that can spread easily in overcrowded places, like prisons. The aim of this study was to determine the prevalence of these diseases in Ghezel Hesar prison (a male prison).

Materials and methods: For this descriptive study, 1404 prisoners in Ghezel Hesar prison were included. The prisoners were evaluated clinically by two experienced dermatologists for scabies and pediculosis.

Results: Of 1404 prisoners, 31 (2.2%) were infested with *Sarcoptes scabiei* and 12 (0.9%) with body louse. There were no cases of head or crab lice. All of the subjects with scabies and 83% of Pediculosis corporis infestation had intense pruritus. There was a significant reverse association between the duration of imprisonment and these diseases. Pediculosis and scabies were more common among new prisoners ($p < 0.001$). Scabies was more common in overcrowded cells. In Pediculosis group there were more opium addicted individuals ($p < 0.01$).

Conclusion: We recommend examining the newly admitted prisoners for scabies and pediculosis by a dermatologist or a trained doctor in order to reduce the spread of these diseases.

Keywords: Scabies, Pediculosis, Prison.

(Iranian Journal of Clinical Infectious Diseases 2007;2(2):87-90).

INTRODUCTION

Louse is an obligate and extremely host specific ectoparasite of mammals and birds (1,2). Pediculosis capitis (head lice), Pediculosis corporis (body lice) and phthiriasis pubis (crab lice) are human diseases that are borne by louse. Itching is the main symptom in symptomatic cases (3).

Body louse lives on clothes, and people who do not change their clothes are often susceptible to it (4). Poverty, overcrowding and poor sanitation help the expansion and transmission of the disease, so it is becoming increasingly common in developed

countries, especially in homeless people or economically deprived populations (5).

Scabies is a contagious disease, caused by the mite *Sarcoptes scabiei*. The routes of transmission are close physical contacts and sharing of contaminated bed (6). Itching is the main characteristic symptom of the disease which worsens at night (7). The incubation period of the disease is one month. Burrow formation, papules and nodules are seen on the wrists, digits and genital regions especially in men (8).

Being contagious, scabies can cause many problems in closed communities such as prisons where prisoners have communal life, just like the scabies outbreak in a prison in the north of

Received: 10 April 2007 Accepted: 1 July 2007

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Tanzania (9). Scabies was also found in prisoners in India in a district jail near Delhi where four-fifths of the teenagers had moderate to severe scabies (10). It was also the main disease of the prisoners in Cameroon (11). In another study in Brazil 78% of the prisoners of a public jail were infested upon initial evaluation (12).

In this study the prevalence of scabies and pediculosis are investigated in a prison in Iran.

PATIENTS and METHODS

Totally, 1404 prisoners in Ghezel Hesar prison were randomly selected. Having explained the study and requested them to complete an informed consent, all prisoners were examined for scabies and pediculosis by two experienced dermatologists and a dermatology resident. They were asked for itching as the main symptom.

Initial data were gathered by a questionnaire and data were analyzed by SPSS for Windows (version 10.5, USA) and student t-test, and chi-square tests were used, when appropriate.

RESULTS

From a total of 7500 jail prisoners, 1404 prisoners (19%) were randomly selected and clinically examined. The mean age of the prisoners and the mean duration of imprisonment were 34 ± 11.2 and 1.9 ± 2.8 years, respectively. Totally, 97 prisoners (7%) complained of generalized and 140 (10%) of localized itching, while 632 prisoners (45%) had a history of opium addiction. Scabies was found in 31 prisoners (2.2%) and pediculosis corporis in 12 (0.9%). There were no cases of pediculosis capitis or phthiriasis pubis.

All scabies-infested patients complained of itching, indeed, 25 complained of generalized itching especially at nights, 5 had pruritus in genital and femoral regions and one complained of itching on his wrist and fingers. On the other hand,

10 (83%) pediculosis corporis-infested patients had corporal pruritus.

Surprisingly, all cases of scabies and pediculosis were found among newly admitted prisoners. The mean duration of imprisonment was significantly differed between scabies-infested and non-infested prisoners (0.25 ± 0.29 vs. 1.9 ± 2.9 years, $p<0.001$). Similarly, the mean duration of imprisonment was significantly lower among pediculosis-infested prisoners (0.5 ± 0.3 vs. 1.9 ± 2.8 years, $p<0.001$).

Furthermore, opium addicted prisoners were more commonly infested with Pediculosis corporis ($p<0.01$). The mean number of roommates in non-infested prisoners and those infested by *Sarcoptes scabiei* was 61 ± 79 and 145 ± 63 , respectively ($p<0.01$).

There was no significant difference on age of scabies and pediculosis cases.

Table 1 summarizes the distribution of patients with scabies and pediculosis in Ghezel Hesar prison.

Table 1. Distribution of patients with scabies and pediculosis in Ghezel Hesar prison

	Cases examined	Scabies	Pediculosis
Prevalence	1404	31(2.2%)	12 (0.9%)
Age (yrs)	34 ± 11.2	29 ± 10.6	38 ± 13.8
Imprisonment duration(yrs)	1.9 ± 2.8	0.25 ± 0.2	0.5 ± 0.3
Pruritus	17%	100%	83%
History of addiction	45%	40%	91%
Number of roommates	61 ± 79	145 ± 63	83 ± 76

DISCUSSION

Finding patients with scabies and pediculosis in prison is of utmost importance, primarily due to the contagious nature of the disease. They not only infest other prisoners and the personnel of the prison but also can affect others especially after their freedom. Scabies epidemic was reported by

Leppard et al in a prison in the north of Tanzania in 1996. All the prisoners were examined. From 1153 prisoners, 818 (70.9%) had scabies of whom 16 (1.4%) had crusted and 802 (69.5%) had classic scabies. Totally, 196 patients (24%) had severe pyoderma. Meanwhile, of 251 prison staff, 65 (26%) had scabies. All the prisoners were treated with oral Ivermectin while all the personnel were treated with topical Lindane, in the mean time, the walls and floors of the cells were disinfected with Actellic 50 EC (9). In a study by Singh et al on 249 male and female prisoners in a district jail in northern India, the prevalence of scabies was 1.8% (10). During 1994-1995, Demoures et al studied 400 prisoners who were mostly men in Cameroon. Scabies was the main disease of the prisoners with an incidence of 5 cases per month (11). In another study in Brazil, Ribeiro et al found that 78% of prisoners of a public jail were infected upon initial evaluation (12).

In our study the prevalence of scabies in Ghezel Hesar prison was 2.2% (31 cases). All the cases along with their roommates were treated with Lindane lotion. This was done to prevent the epidemic of scabies (9). Pruritus is an important symptom of scabies. All the patients with scabies complained of itching. It is essential to examine all the prisoners with itching, especially when it is generalized or in the genital regions.

The duration of imprisonment of the cases with scabies was lower than non-infested ones ($p < 0.001$) and as mentioned earlier, scabies was detected only among newly admitted prisoners. This reveals the importance of primary dermatological examination of all newly admitted prisoners, and in case of any doubt of scabies, the relevant treatment seems logical.

The number of roommates in cases with scabies was higher than others ($p < 0.01$). The more the physical contacts, especially in the crowded places with low sanitation, the higher the risk of transmission of scabies (9).

The prevalence of *Pediculus corporis* in Ghezel Hesar prison was 0.9% (12 cases). No similar study was found in the literature. In certain epidemiologic school surveys conducted in different countries, the prevalence of pediculosis has been found to be 15% in France (13), 33.7% in Australia (14), 40% in Taiwan (15), 78.6% in Libya (13), 55% in Israel (16), 28.3% in the U.K. (17), and 0.8% in Turkey (18). In our study, 91% of the cases of pediculosis had a history of opium addiction, which could be due to poor sanitation and low concern of addicted people.

Totally, 83% of body lice cases complained of body itching. This complaint along with the history of addiction makes it necessary to examine their skin and clothes. The mean duration of imprisonment of cases with *Pediculus corporis* was less than the others ($p < 0.001$). Thus early dermatological examination of newly admitted prisoners seems logical.

Finally, all prisoners are recommended to be examined thoroughly by a dermatologist before entering the prison and to be placed in quarantine for at least 48 hours so that the risk of transmission of the contagious dermatologic diseases especially scabies and pediculosis is decreased.

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