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Brief Original Article

Scabies and nocturnal pruritus: preliminary observations in a group of African migrants

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Abstract

Introduction: Pruritus of scabies is due to a type IV T cell-mediated reaction to the mite's saliva, eggs, excrements and other products released by the mite during its life cycle. Movements of the mite also induce pruritus. According to the literature, scabies pruritus has higher frequency and intensity at night.

Methodology: In this short communication we present the results of a survey on nocturnal pruritus in a group of African migrants with scabies. A questionnaire was given to 36 patients: "Is your pruritus more severe at night?" and "Do you wake up from the sleep because of pruritus?".

Results: The answer to the first question was "yes" in 13/18 patients (72.2%) visited from October 2018 to February 2019, and in 6/18 patients (33.3%) visited from May to September 2019. The answer to the second question was "yes" in 11/18 patients (61.1%) of the first group and in 5/18 patients (27.7%) of the second group.

Conclusions: It is possible that nocturnal pruritus in scabies is due to the temperature of the skin surface: when it is high, because of the use of pajamas, heavy sheets and blankets (from October to February), pruritus increases; when the skin's temperature is low, as in the summertime, when people usually sleeps without blankets, with light sheets and pajamas or not having a stitch on, pruritus is less frequent and severe. These conclusions must be confirmed by studies based on larger groups of patients.

Key words: Scabies; pruritus; itching.

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Introduction

Pruritus of scabies is due to a delayed type IV hypersensitivity reaction to Sarcoptes scabiei var. hominis, its saliva (in particular keratolytic enzymes that are produced by females for the construction of the burrows), products released by the mite during its life cycle, eggs and excrements [1-4]. Movements of the mite also induce pruritus [4].

According to literature data, scabies pruritus is more frequent and severe at night [3-15]. In a French study on children with scabies, nocturnal pruritus was present in 82.5% of patients [11]. These results were confirmed in an Indian study: 79.4% of patients reported a worsening of pruritus at night [13]. Nocturnal pruritus can cause severe sleep disturbances [4,11]: in the previous cited French study, 22.4% of patients reported sleep disturbances [11].

We will present the results of a survey on nocturnal pruritus in a group of African migrants with scabies.

Methodology

A total of 36 male adult patients were visited from October 2018 to February 2019 (18 patients) and from May to September 2019 (18 patients). The two groups were similar for gender, age and duration of the infestation (3 to 4 months, according to medical history). The diagnosis of scabies was confirmed by microscopical examinations: they were considered positive when adults or fragments of them or eggs of *Sarcoptes scabiei* var. *hominis* were visible. In all these patients, scabies was contracted in their countries (Niger, Mali, Senegal, Gambia, Guinea, Eritrea and Somalia) or during the trip from these countries to Italy. A questionnaire about pruritus was given to all patients. The two questions were: «Is your pruritus more severe at night?» and «Do you wake up from the sleep because of pruritus?». All patients were treated with 5% permethrin cream (one application/day for two consecutive days: the treatment was repeated 7-10 days later) [16].

Results

The answer to the first question was "yes" in 13/18 patients (72.2%) visited from October 2018 to February 2019, and in 6/18 patients (33.3%) visited from May to September 2019. The answer to the second question was "yes" in 11/18 patients (61.1%) of the first group and in 5/18 patients (27.7%) in the second group.

Discussion

According to the results of this survey, pruritus worsens during night much more in patients observed in autumn and winter than in patients observed in spring and summer. It is rather difficult to explain these results. Almost all epidemiological studies on scabies (in United Kingdom [17,18], Denmark [19], Turkey [20], Israel [21,22], India [1] and New Zealand [23]) conclude that the incidence of this infestation is higher in autumn and winter. Only in a study carried out in Saudi Arabia it was observed that recurrence rate of scabies was higher from May to August [24]. The higher incidence of scabies in autumn and winter has been explained with the fact that cold weather may encourage overcrowding [2,18]. Poor hygiene is also important [1].

We previously stated that, according to our results, pruritus worsens during night much more in patients observed in autumn and winter than in patients observed in spring and summer. We think that nocturnal pruritus of scabies is associated with pajamas, heavy sheets and blankets: they induce an increase of the temperature of the skin: according to some authors, the heat stimulates movements and activity of the mite [4,7]. This would be in contrast with the fact that females and nymphs of *Sarcoptes scabiei* var. *hominis* can survive in a heated home environment up to 5 days and longer in a cooler weather [2,17,18]. However, this was actually demonstrated only for *Sarcoptes scabiei* var. *canis* [25,26]. The second part of our study was carried out from May to September, when the climate is warm and people usually sleeps without blankets, with light sheets and pajamas or not having a stitch on. In a recent Korean study, the authors observed that, in a group of 82 patients with scabies, the commonest aggravating factor of pruritus was heat (40.2% of patients) and that the most important alleviating factor was cool environment (32.9% of patients) [15].

We believe that nocturnal pruritus in scabies is due to the temperature of the skin surface: when it is high, because of the use of pyjamas, heavy sheets and blankets, pruritus increases; when it is low, as in the summertime, when people usually sleeps without blankets, with light sheets and pyjamas or not having a stitch on, pruritus is less frequent and severe. These conclusions must be confirmed by studies based on larger groups of patients.

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