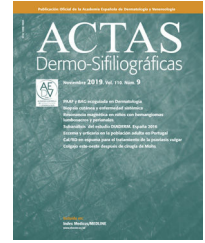




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## CASE AND RESEARCH LETTER

### [Translated article] Diagnosis and Clinical Characteristics of Scabies in a Tertiary Care Hospital During the SARS-CoV-2 Pandemic: A Descriptive Study



#### Prevalencia y características clínicas de pacientes diagnosticados de escabiosis durante la pandemia producida por el coronavirus de tipo 2 causante del síndrome respiratorio agudo (SARS-CoV-2) en un hospital de tercer nivel. Un estudio descriptivo

To the Editor,

We are under the distinct subjective clinical impression that the number of patients with an emergency referral to our department with suspected diagnosis of pruritus subsequently confirmed to be scabies is increasing. We also perceive greater recurrence rates in these patients due to relapse or reinfection. Therefore, we considered determining the prevalence and clinical characteristics of patients diagnosed with scabies during the SARS-CoV-2 pandemic and comparing with their respective values prior to the pandemic.

With this aim, data were compiled on patients with diagnoses coded as scabies or other related diagnoses (probable scabies, scabies to be ruled out) in our center from March 2020 to August 2011 (17 months) and for the 17 prior to the start of the pandemic.

Of these patients, those whose clinical picture was inconsistent with the diagnosis of scabies following chart review were excluded.

Finally, the prevalence of the disease in both groups was studied, along with different clinical characteristics such as age, sex, initial treatment received, treatment failure (due to relapse or reinfection), and the need for oral treatment with ivermectin.

**Table 1** Results obtained from the descriptive population-based study.

Variables	Pre-pandemic period	Pandemic period
Total number of cases	125	164
Mean age	30.89 years	29.83 years
Males	77 (61.6%)	93 (56.7%)
Females	48 (38.4%)	71 (43.3%)
Primary infections	76 (60.8%)	107%
Secondary infections	49 (39.2%)	57 (34.7)
Initial treatment	Permethrin 124 Sulfur precipitate 1	Permethrin 161 Ivermectin 3
Number of relapses	22 (17.6%)	55 (33.5%)
Patients treated with ivermectin	7 (5.6%)	39 (23.8%)

During the pandemic, 164 cases of scabies were recorded compared with 125 in the previous periods, that is, an increase of 31.2%.

The mean age, percentage of patients of each sex, and number of primary or secondary infections in both groups were similar. The initial treatment in almost all cases was topical permethrin 5% cream.

Some important differences between groups were found in the number of relapses and need for oral ivermectin treatment. In the pandemic group, 33.5% were relapsed patients, with 23.8% requiring oral ivermectin treatment, in contrast to the pre-pandemic group, with only 17.6% corresponding to relapse and 5.6% requiring oral ivermectin treatment (Table 1).

Scabies is a dermatosis caused by *Sarcoptes scabiei*, *hominis* variant, the transmission of which requires close cutaneous contact favored by overcrowding, deficient ventilation, and prolonged contact, or fomite transmission associated with mite survival outside the host.<sup>1,2</sup>

Taking this into account, in the context of the state of alarm decreed during the SARS-CoV-2 pandemic, a greater number of endemic cases would be expected in nuclear families with increased difficulties for eradication, while normal

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epidemic spread might be expected to be curtailed, with an overall decrease in the total number of scabies cases, in contrast to what was actually observed. Turan et al.<sup>3</sup> evaluated the prevalence of scabies in a population-based study in Turkey, noting a progressive increase in cases from 2019 until the first quarter of 2020, but at the onset of the pandemic in the second quarter of 2020, this progression was curtailed, with a drastic decrease in the number of cases of scabies, with loss of the tendency for increasing prevalence. The authors concluded that fewer cases had been diagnosed during the pandemic compared with the period prior to the pandemic, even though similar numbers were obtained due to this change in tendency towards increased numbers of cases.

This was not the case in Spain, where publications indicate an increase in the prevalence of scabies, albeit with a shorter observation time, similar to that observed in our study,<sup>4</sup> suggesting that the lock-down in Spain may not have been adequate, allowing spread of infection.

With regards treatment failures, this was to be expected as we encountered patients who were afraid to attend healthcare centers during the pandemic and who had problems with managing outbreaks within a family. But on the other hand, we also found evidence of treatment failure because of intrinsic resistance of the mite to permethrin on finding patients within the same household who were cured with a conventional permethrin treatment, whereas others in the same household continued to relapse, even though they followed exactly the same treatment and hygiene measures as their cohabitants.

In 2018, Sunderkötter et al.<sup>5</sup> reported intrinsic resistance to acaricide treatments in non-*hominis* variants of *S. scabiei* and, within the *hominis* variant, a group of Australian researchers also reported greater resistance to treatment due to greater expression of glutathione transferases.<sup>6</sup> However, to make recommendations and formulate conclusions, more studies are needed that correlate these structural changes with clinical resistance to treatment to strengthen the evidence base.

Contrary to that expected from epidemiological considerations and the state of alarm, more cases of scabies were reported during the pandemic than in the pre-pandemic period, although the clinical profile of the recorded cases both in terms and age and sex and in terms of primary or secondary infection were unchanged.

The cases reported during the pandemic were more resistant to treatment; whether due to poorer hygiene measures, errors in treatment application, or resistance to treatment,

or due to a greater number of reinfestations, requiring a higher percentage patients with oral ivermectin treatment. In our experience, this agent has shown a very good efficacy profile, managing to eradicate the mite in relapsed patients after several cycles of topical permethrin application. In the future, supported by sufficiently robust studies, the possible existence of intrinsic resistance of the mite to the different acaricide therapies available should be assessed.

## Conflicts of interest

The authors declare that they have no conflicts of interest.

## References

1. Arlian LG, Morgan MS. A review of *Sarcoptes scabiei*: past, present and future. *Parasit Vectors*. 2017;10:297, <http://dx.doi.org/10.1186/s13071-017-2234-1>.
2. Cerro PA, Navarro-Bielsa A, Palma AM. FR – Epidemia de sarna en el contexto de la pandemia de COVID-19. *Actas Dermosifiliogr*. 2021, <http://dx.doi.org/10.1016/j.ad.2020.11.028>.
3. Turan Ç, Metin N. Impact of pandemic in the frequency of scabies: possible scabies outbreak scenario aftermath COVID-19. *Türkiye Parazitoloj Derg*. 2021;45:190–4, <http://dx.doi.org/10.4274/tpd.galenos.2021.7236>.
4. Martínez-Pallás I, Aldea-Manrique B, Ramírez-Lluch M, Manuel Vinuesa Hernando J, Ara-Martín M. Scabies outbreak during home confinement due to the SARS-CoV-2 pandemic. *J Eur Acad Dermatol Venereol*. 2020;34:e781–3, <http://dx.doi.org/10.1111/jdv.16879>.
5. Sunderkötter C, Aebischer A, Neufeld M, Löser C, Kreuter A, Bialek R, et al. Increase of scabies in Germany and development of resistant mites? Evidence and consequences. *J Dtsch Dermatol Ges*. 2019;17:15–23, <http://dx.doi.org/10.1111/ddg.13706>.
6. Mounsey KE, Pasay CJ, Arlian LG, Morgan MS, Holt DC, Currie BJ, et al. Increased transcription of Glutathione S-transferases in acaricide exposed scabies mites. *Parasit Vectors*. 2010;3:43, <http://dx.doi.org/10.1186/1756-3305-3-43>.

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