

LETTER

Prevalence of hand contact urticaria and related risk factors among healthcare workers during the COVID-19 pandemic: A self-reported assessment

Dear Editor,

During the coronavirus disease 2019 (COVID-19) pandemic, healthcare workers (HCWs) are likely to experience a range of novel challenges.¹ Healthcare providers in contact with COVID-19 patients must wear personal protective equipment (PPE)²; therefore, they are vulnerable to PPE-related adverse skin reactions such as contact urticaria.¹

This cross-sectional survey was approved by the institutional ethics committee to assess the prevalence and severity of hand contact urticaria in HCWs. To restrict person-to-person contact, we designed a web-based, self-administered questionnaire based on the Nordic Occupational Skin Questionnaire (NOSQ-2002),^{3,4} which was distributed in the first 2 weeks of May 2020. Self-reported contact urticaria was defined as a positive response to the question: "Have you ever had itchy wheals appearing and disappearing rapidly (within hours) on your hands, wrists or forearm?"³ To attain more credible answers, some images of contact urticaria were also represented. To grade the urticaria severity, a scale from 0 to 10 was used (0: least severe; 10: most severe).³

The response rate to the questionnaire was 78.7% (408/518); 18 questionnaires were excluded from the statistical analysis due to some missing values. A total of 390 HCWs (290 females and 100 males; mean age: 34.57 ± 9.41 years) were incorporated. The rate of hypersensitivity to latex gloves was 32.6% in all HCWs and 53.1% in HCWs with contact urticaria. The total prevalence of hand contact urticaria was 8.2%. Interestingly, 50% of subjects with contact urticaria reported experiencing this problem for the first time during the pandemic.

Thirty-two HCWs with contact urticaria (25 females and seven males; mean age: 35.75 ± 10.05 years) consisted of 23 (71.9%) medical doctors, six (18.8%) nurses, and three (9.4%) other staff members; 86.2% of these HCWs had been in direct contact with COVID-19 patients, with 87.5% of them complaining of itching. The contact urticaria severity score was 5.41 ± 2.59 (Table 1).

The presence of contact urticaria was associated with work hours per week, history of dermatological diseases, allergic conjunctivitis, asthma, hypersensitivity to latex gloves and itching during sweating. There was no significant association between hand contact urticaria and sex, age, frequency of hand disinfection and history of chronic comorbidities and/or COVID-19 affliction (Table 1).

In a recent study by Süß et al, contact urticaria was present in less than 0.4% of examined patients.⁵ In our study, the higher prevalence of contact urticaria might be due to the excessive use of PPE, particularly gloves, in this pandemic and the impossibility of disease confirmation by dermatologists. Süß et al reported that some risk factors such as natural rubber latex associated with contact urticaria which are consistent with our findings.⁵ The main limitation of this study, given its self-reported nature, was that contact urticaria perceived by patients could not be examined by dermatologists.

According to the above-mentioned risk factors in this survey, we recommend the use of latex-free or hypoallergenic gloves. This is more important among individuals with a history of concomitant dermatological diseases or hypersensitivity to gloves. As hand contact urticaria may influence adherence to hand hygiene protocols, educational interventions along with early treatment of the disease make it possible for all individuals to follow these protocols during the COVID-19 pandemic.

In this study, we found a higher prevalence of hand contact urticaria during COVID-19 in comparison with prior studies; increased use of PPE, particularly gloves, in this pandemic might be an aggravating factor. However, further studies with larger sample sizes are required to clarify this health issue.

CONFLICT OF INTEREST

The authors declare no potential conflict of interest.

AUTHOR CONTRIBUTIONS

Fahimeh Abdollahimajd and Mohammad Reza Pourani contributed to the conception of the work. Mohammad Reza Pourani drafted the manuscript. Fahimeh Abdollahimajd and Soheila Nasiri critically revised the manuscript. All authors gave final approval and agreed to be accountable for all aspects of the work ensuring integrity and accuracy.

DATA AVAILABILITY STATEMENT

The data are available from the corresponding author upon reasonable request.



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TABLE 1 Demographic data and clinical features of patients with hand contact urticaria and correlation between hand contact urticaria and different variables

		HCWs (n = 32)	P-value
Sex	Male	7 (21.9%)	.611
	Female	25 (78.1%)	
Age	Mean ± SD	35.75 ± 10.05	.460
Educational level	Diploma or lower	1 (3.1%)	.507
	BSc/BA	9 (28.1%)	
	MSc-MD	8 (25%)	
	PhD	14 (43.8%)	
Marital status	Single	17 (53.1%)	.804
	Married	15 (46.9%)	
Work hours per week	<20	3 (10.3%)	.015
	20-39	3 (10.3%)	
	40-59	13 (44.8%)	
	60-79	6 (20.7%)	
	80-99	3 (10.3%)	
	>100	1 (3.4%)	
	Mean ± SD	3.21 ± 1.21	
	HCW profession	Medical doctor	
	Nurse	6 (18.8%)	
	Other staff members	3 (9.4%)	
	Pharmacist	0 (0%)	
Direct contact with COVID-19 patients		25 (86.2%)	.307
History of dermatological diseases		19 (65.5%)	.007
History of chronic comorbidities		4 (12.5%)	.842
Rhinitis		23 (71.9%)	.055
Allergic conjunctivitis		17 (53.1%)	.038
Asthma		7 (21.9%)	.014
Using gloves		30 (94%)	.876
Hypersensitivity to gloves	Latex	17 (53.1%)	.010
	Total	19 (63.3%)	
Using glove for surface disinfection during COVID-19		11(34.4%)	.832
Itching		28 (87.5%)	<.001
Itching during sweating		12 (37.5%)	.039
History of COVID-19 affliction		1 (3.1%)	.675
History of COVID-19 affliction in first-degree family members		3 (9.4%)	.521
Frequency of hand disinfection	Mean ± SD ^a	2.34 ± 1.310	.466
Type of hand disinfection	Alcohol-based disinfectants	28 (87.5%)	.533
	Soap	31 (96.9%)	
	Other	1 (3.1%)	

Abbreviations: BA, Bachelor of Arts; BSc, Bachelor of Science; COVID-19, coronavirus disease 2019; HCW, healthcare worker; MD, medical doctor; MSc, Master of Science; n, number; PhD, doctoral degree.

^aMean for daily frequency of disinfection: 1 = 0-5x, 2 = 6-10x, 3 = 11-15x, 4 = 16-20x, 5 = >20x.

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