Received: 20 January 2018 | Accepted: 5 March 2018

DOI: 10.1002/cia2.12014

ORIGINAL ARTICLE

WILEY Journal of Cutaneous Immunology and Allergy

Recognition of patch testing among pharmacists

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Abstract

Background: There are currently little data available on the research targeted at pharmacists regarding dermatological diseases including contact dermatitis. This study evaluates recognition of contact dermatitis and patch testing among pharmacists.

Methods: Subjects were 104 pharmacists attended a seminar at Kawasaki, Japan, in January 2017. Ninety-three of the 104 (89.4%) worked in a pharmacy. They completed a self-administered questionnaire including working form, length of career as a pharmacist, encounters of contact dermatitis patients, patch testing, and its methodology.

Results: Ninety-three of the 104 (89.4%) encountered patients with contact dermatitis. The most suspected allergen was a cosmetic which 59 pharmacists encountered. The second and third were, in that order, drugs (55) and plants (46), respectively. Ninety-five of the 104 (91.3%) knew patch testing, and 28 of those (26.9%) had recommended it for patients; 28 of the 104 (21.2%) answered methodology of patch testing correctly.

Conclusion: This study demonstrated that many patients with contact dermatitis visit pharmacies, and pharmacists play an important role for patients' management. Although most pharmacists knew patch testing itself, its methodology was not correctly understood. For allergic contact dermatitis patients, it is important to identify the cause. Hence, we must enlighten pharmacists as to significance of patch testing.

KEYWORDS
allergic contact dermatitis, patch testing, pharmacists, pharmacy, questionnaire

1 | BACKGROUND

For allergic contact dermatitis patients, it is important to identify the cause by patch testing in order to prevent recurrences. As contact dermatitis is a common disease, it is thought many such patients visit pharmacies instead of hospitals. There are, however, currently little data available on the research targeted at pharmacists regarding contact dermatitis and patch testing.

2 | METHODS

The subjects were 104 pharmacists who attended a seminar at Kawasaki, Japan, in January 2017. Ninety-three of these (89.4%) worked for pharmacy, and 8 (7.7%) were hospital pharmacists (Table 1). The length of their career as a pharmacist was as follows: 13 (12.5%) were less than 5 years, 15 (14.4%) were 5 or more and less than 10 years, 42 (40.4%) were 10 or more and less than

TABLE 1 Characteristics

		Carrier (years)					
		< 5	5 ≤ c < 10	10 ≤ c < 20	20 ≤	Not answered	Total
Working form	Pharmacy	7	14	41	30	1	93 (89.4)
	Hospital	5	0	1	2	0	8 (7.7)
	Others	1	1	0	1	0	3 (2.9)
Total		13 (12.5)	15 (14.4)	42 (40.4)	33 (31.7)	1 (1.0)	104

Questionnaire

Q1. For which are you working?

( ) Pharmacy ( ) Clinic ( ) Hospital ( ) Others

Q2. How long is your carrer as a pharmacist?

( ) < 5 years ( ) 5 ≤ career <10 years ( ) 10 ≤ career <20 years ( ) 20 years ≤

Q3. Have you ever encountered patients with contact dermatitis?

( ) Yes ( ) No

Q4. If yes, did you think what was the cause? (any)

( ) cosmetics ( ) accessories ( ) gum ( ) drugs ( ) plants others ( )

Q5. Do you know patch testing ?

( ) Yes ( ) No

Q6. If yes, have you ever recommended patch testing to patients?

( ) Yes ( ) No

Q7. When should we read patch testing results post application (any)?

( ) 1 day ( ) 2 days ( ) 3 days ( ) 4 days ( ) 5 days ( ) 6 days ( ) 7 days

FIGURE 1 Questionnaire

20 years, and 33 (31.7%) were more than 20 years, respectively (Table 1). They were assessed using an administered questionnaire as to contact dermatitis and patch testing. This includes working form, length of career, contact dermatitis encounters, suspected cause in those patients, and recognition of patch testing and its methodology (Figure 1). Regarding methodology of patch testing (Q7), we regarded answers including D2 or D3 and D7 readings as correct.

3 | RESULTS

Table 2 contrasts presence/absence of encounters of contact dermatitis patients. Ninety-three of the 104 (89.4%) encountered contact dermatitis patients. Suspected causes of those were, in that order, cosmetics 59, drugs 55, plants 46, accessories 46, gum 15, and so on (Table 2). Figure 2 shows recognition and recommendation of patch testing. Ninety-five of the 104 (91.3%) recognized patch testing, and 28 pharmacists (26.9%) have recommended patch testing to patients (Figure 2). Figure 3 contrasts answers to patch testing methodology (reading time), and 22 of the 104 (21.2%) answered correctly. The most common answer of reading

TABLE 2 Encounters of contact dermatitis

Encounters of contact dermatitis	No.	Suspected causes	
+	93 (89.4)	Cosmetics	59
		Drugs	55
		Plants	47
		Accessories	46
		Gum	15
		Hair-dye	4
		Caterpillar	2
		ROSIN	1
		Mango	1
		Ginkgo	1
		Japan	1
—	11 (10.6)		

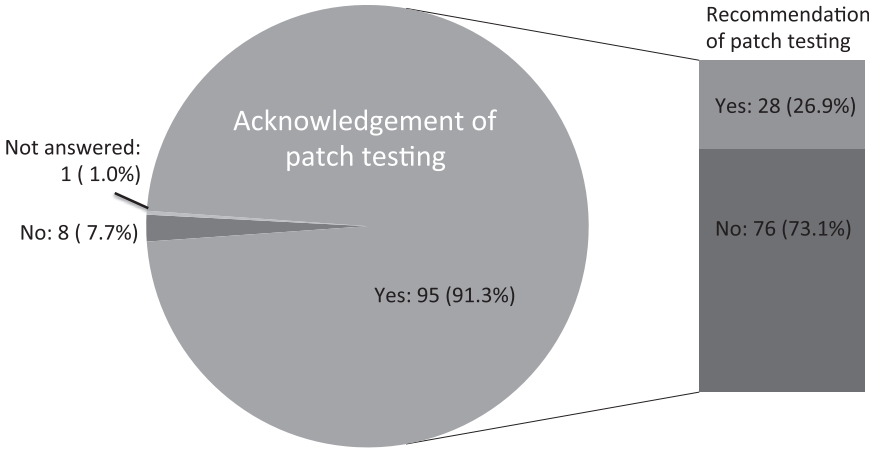

FIGURE 2 Recognition/recommendation of patch testing

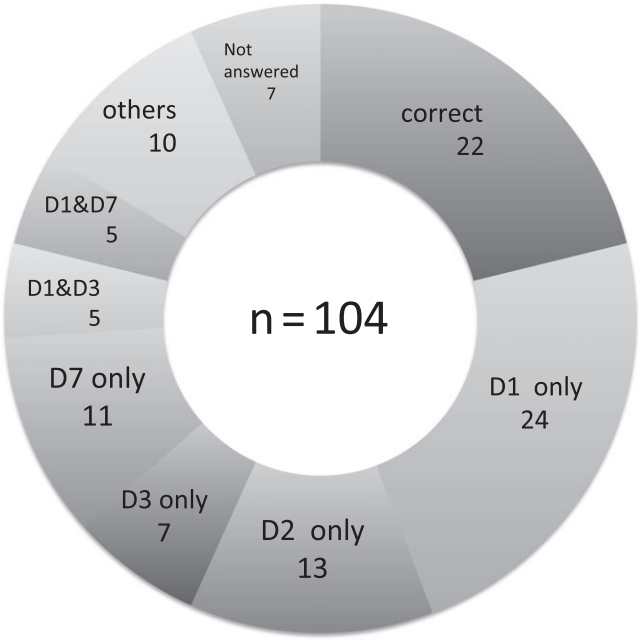

FIGURE 3 Answer to reading time of patch testing

TABLE 3 Answer to reading time of patch testing by careers

Career	Correct	Wrong	Accuracy rate (%)
<5	4	9	30.8
5 ≤ c < 10	0	15	0
10 ≤ c < 20	6	36	14.3
20<	12	21	36.4
Not answered	0	1	0
Total	22	82	21.2

time was 1 day after application only (24/104: 23.1%). The second and third highest answers were day 2 only (13/104: 12.5%) and day 7 only (11/104: 10.6%), respectively (Figure 3). Table 3 shows those answers by carriers. The highest accuracy rate was recorded among those with more than 20 years career (36.4%), and the second highest was those with less than 5 years (30.8%), respectively (Table 3).

4 | DISCUSSION

There are 301 323 pharmacists, and 172 142 of these (57.1%) work for pharmacies in Japan.[1] Our data suggest recognition of contact dermatitis and patch testing among pharmacy pharmacists, because about 90% of subjects were in this category. As predicted, contact dermatitis is a common disease as about 90% of subjects encountered patients with it (Table 2). Suspected causes with more than half of such pharmacists were as follows: cosmetics, drugs, plants, and accessories (Table 2). The fact that the most suspected cause was "cosmetics" corresponds to the report from Skin Safety Case Information Network (SSCI-net) in Japan.[2] "Drugs" are considered as contact dermatitis to external medicines including ointments and compress [3,4] Metal contact dermatitis connects to answer of "accessories" as nickel has been the allergen revealing the highest positive rate in patch testing with Japanese standard series for 10 years.[5,6] The second highest was urushiol, which must be strongly related to answer of "plants".[6,7]

Patch testing aims to reproduce an eczematous reaction by applying allergens under occlusion on intact skin of patients suspected to be allergic.[8] Despite limitations, it is by no means the cornerstone of the diagnostic procedure for allergic contact dermatitis patients.[8] This testing itself is well known among pharmacists because more than 90% recognized it (Figure 2). In the testing, tested allergens are placed onto the skin under occlusion for 2 days. Old dermatology textbooks describe that reading is performed at that time and 1 day after removal. However, reading should not be performed at only such days but day 7 after occlusion.[8] Answers were, in that order, 1 day after application only 24, correct 22, day 2 only 13, day 7 only 11, and so on (Figure 3). Although patch testing and its methodology were not understood correctly among eighty percent of subjects, young and veteran ones know it better than other generations (Table 3).

In conclusion, it is necessary to identify the cause by patch testing for allergic contact dermatitis patients in order to prevent recurrences. As contact dermatitis is a common disease as described above, pharmacists, in particular ones working pharmacies, play an important role for such patients' management. In other words, it is not too much to say that pharmacists are the first gatekeepers for this clinical behavior. If pharmacists know importance of detecting allergens, they can recommend patch testing to contact dermatitis patients. As a result, many patients can prevent recurrences of dermatitis. We must, therefore, more enlighten them as to significance of patch testing.

ACKNOWLEDGEMENTS

We gratefully acknowledge the help of Professor Howard I. Maibach, M.D.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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How to cite this article: Kanazawa A, Iwahashi Y, Ohkusa T, et al. Recognition of patch testing among pharmacists. *J Cutan Immunol Allergy*. 2018;1:69–72. https://doi.org/10.1002/cia2.12014