

Health Care Utilization Characteristics in Patch Test Patients

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Background: The length of time between onset of symptoms and definitive diagnosis is associated with outcomes in contact dermatitis (CD). Understanding the health care experience of patients with CD could identify areas for improvement.

Objective: The objective of the study was to describe the health care experience of individuals being patch tested and the barriers and facilitators to their seeking care.

Methods: One hundred forty-nine patients completed a survey containing information on types of health care providers seen, length of wait times, and barriers and facilitators to seeking care.

Results: Sixty-six percent were first assessed by their family physicians. Forty-five percent waited more than 3 months before seeing a health care provider. Common reasons for delay included thinking their symptoms (1) would get better, (2) were not serious enough, or (3) were not limiting their ability to work or carry out other activities. Most patients waited less than 3 months for dermatological assessment and for patch test consultation after referral.

Conclusions: Patients with possible CD spend considerable time in the health care system before they undergo definitive assessment. Understanding the reasons for not seeking care may be useful for promoting earlier evaluation and intervention to result in better outcomes.

There is relatively little information available regarding the health behaviors and patterns of health services utilization among individuals with suspected contact dermatitis (CD) presenting for patch testing. Several studies have surveyed physicians regarding their practices with respect to patch testing and care for individuals with possible CD.^{1–6} Other studies have obtained information from the patient perspective on health services provided.⁷ There are few studies that have examined other aspects of health care utilization.^{7–9}

A consistent observation in several studies examining outcomes is the association between length of time with symptoms of dermatitis before definitive assessment and the outcome, with a longer time being associated with a poorer outcome.^{7,10–13} Obtaining a more detailed and nuanced understanding of the patient's journey through the health care system and reasons for seeking or not seeking care is important if we are to address the time gap between onset of symptoms and definitive diagnosis and improve outcomes.

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The objectives of the study were to describe the health care utilization of patients presenting for patch testing, examine the reasons for seeking or delaying care, and compare patients with work-related diagnoses to those without.

METHODS

The study was approved by the Research Ethics Board of St Michael's Hospital in Toronto, Ontario, Canada, and signed consent to participate was obtained. All patients attending the Occupational Health Clinic, a regional referral center for suspected CD with patch testing capabilities, were eligible for inclusion in the study with the exception of those who were not able to communicate in English. Consecutive patient recruitment took place between mid-January and mid-May 2013. Of 212 patients eligible for the study, 149 consented, for a participation rate of 70%.

The survey was developed to obtain information about health care utilization, such as practitioners and care settings accessed, wait times, and reasons for seeking or not seeking care. The reasons for waiting to seek care queried in the survey were derived in part from a 2012 study by Lysdal et al¹⁴ that assessed a variation of these reasons in the context of not seeking workers compensation.

The data were entered into a SPSS file and analyzed using SAS. Simple descriptive statistics including means, medians, and frequencies were calculated. Comparisons were done by using *t* test, χ^2 test, and Fischer exact test.

RESULTS

Comparison of Participants and Nonparticipants

Demographic variables including age, sex, rurality, diagnosis (allergic contact dermatitis [ACD], irritant contact dermatitis [ICD], and atopic dermatitis [AD]), referral source (public health care system vs workers' compensation), and work-relatedness were compared between those who participated in the study and those who did not. There were no significant differences between those who did and did not participate.

Description of Health Care Utilization by Participants

The demographics of the participants are presented in Table 1. The average age was 46 years and 66% were women. The average length of time between onset of the dermatitis and patch testing was 61 months with a median of 18 months. Final clinical diagnoses made by the dermatologist included 42% with ACD, 34% with ICD, and 21% with AD. The dermatologist made a work-related diagnosis in 38% of cases. When all participants were asked if they thought their problem was related to work, 50% reported that they thought it was work-related.

Patients were asked about management of their skin problem and 90% reported topical treatment, whereas 30% reported oral treatment. Twenty-five percent indicated that a job modification or job change was recommended. Sixty-four percent reported having a drug plan.

The timing of initial health care presentation and reasons for seeking and not seeking care are presented in Table 2. Forty five percent of the study population waited more than 3 months to pursue an evaluation of any sort within the health care system. This included visits to a family physician, workplace and walk-in clinics, emergency department, and other points of medical care. The most common reasons for delaying care were thinking their

TABLE 1. Demographic Information (n = 149)

Age, mean (range), y	46 (15–79)
Sex (female), %	66
Referral from workers' compensation, %	15
Postal code, %	
Toronto	46
Greater Toronto area excluding Toronto	34
Rural	20
Industry sector, %	
Service	37
Healthcare	13
Manufacturing	8
Government services	6
Automotive	5
Diagnosis, %	
ACD	42
ICD	34
AD	21
Work-related (physician diagnosis)	38

TABLE 2. Initial Presentation (n = 149)

Wait time until first seeking care, mo	
<1	27%
1–3	28%
3–6	17%
6–12	8%
>12	20%
Reasons for waiting to seek care	
Thought symptoms would get better	75%
Did not think symptoms serious enough	44%
Symptoms were not limiting ability to work	29%
Symptoms were not limiting regular activities outside of work	24%
I was concerned about missing work for appointments	13%
Thought symptoms natural consequence of work	11%
I was concerned about losing my job	9%
Coworkers had similar symptoms—did not think it was a big deal	8%
I was worried seeking medical attention would lead to conflict with employer	7%
I worried about the cost of treatment	6%
I did not think a doctor would be able to help me	5%
I was anxious about my symptoms and preferred not to have them looked into	5%
Main reason for seeking treatment	
Not getting better or getting worse	51%
Symptoms bothersome	24%
Getting hard to work or do activities	8%
Appearance/involvement of the face	7%
Healthcare provider arranged	4%
Wanted to know the cause	3%
Where patient was first assessed	
Family physician	66%
Walk-in clinic	18%
Emergency department	6%
Workplace clinic	5%
Other	6%
If they saw their family physician, number of visits, mean (range)	4 (1–30)

symptoms would get better (75%), thinking their symptoms were not serious enough (44%), or that their symptoms were not limiting either their ability to work (29%) or their regular activities outside of work (24%). Thinking their symptoms were a natural consequence of work and concern about missing work for medical appointments were each mentioned by at least 10%. Examples of other reasons included “no one believed me,” “my face condition was really bad and I didn’t want to expose myself in public,” “lack of support at the workplace,” “I thought I could control it if I figured out what it was,” and “I thought I could not receive treatment due to being pregnant.”

When the participants were asked about the main reason for seeking care, the major reason was their symptoms were not getting better or were getting worse (51%) or that their symptoms were very bothersome (24%). Descriptive reasons for finally

TABLE 3. Investigation (n = 149)

Referral to a dermatologist before coming to patch test clinic	83%
If they saw a dermatologist, wait time, mo	
<1	26%
1–3	40%
3–6	20%
6–12	8%
>12	5%
Other specialists seen	
Allergist	16%
How they obtained their referral to patch test clinic	
Dermatologist	62%
Allergist	13%
Family physician	11%
Workplace Safety and Insurance Board	9%
Length of wait time to patch test clinic appointment, mo	
<1	6%
1–3	47%
3–6	35%
6–12	11%
>12	1%

seeking care included “skin on my face started to ooze,” “was unable to work at my job without being covered in blisters,” “doctors prescribed many creams that weren’t effective,” and “at my regular check-up when my eyes were flaring, my GP took matters in her own hands.”

Patients were most often first assessed by their family physician (66%). Walk-in clinics were used by 18%. The mean number of visits to their family physician (if seen) was 4 (median, 3; range, 1–30).

Table 3 presents information related to dermatological and other specialist care access. Eighty-three percent were seen by a dermatologist before coming to the patch test clinic. The wait time for dermatological assessment was greater than 3 months for 34% of the participants. An allergist had been consulted by 16%.

Table 3 also presents the information related to referral and wait times for the patch test clinic. Most (62%) of patient referrals were completed by a dermatologist but allergists (13%) and family physicians (11%) were also sources of physician referrals. Nine percent were referred from the Workplace Safety and Insurance Board, the workers’ compensation board in Ontario. The wait time

for a patch test consultation was greater than 3 months for 47% of the participants. When asked if there was a specific person or group that had facilitated their referral to the patch test clinic, 34% identified colleagues or their workplace and 32% identified a physician. The key barriers noted for the patch test clinic assessment were waiting time to be seen (32%) and travel/distance (7%).

Comparison Between Those With Work-Related Problems and Those Without

When those with diagnosed work-related dermatitis were compared with those without, a few differences were noted. From a demographic perspective (Table 4), those with work-related CD were significantly younger, and were more likely to be men, live outside Toronto in rural areas, have ICD, and have had modified work recommended.

Table 5 presents the comparison between patients with work-related and those with non-work-related dermatitis for health care utilization. There was no difference related to wait times for initial assessment. Some differences were observed in reasons for delaying care, including increased emphasis on thinking the symptoms were a natural consequence of work or age, concern about missing work for appointments, concern about losing their job, not thinking the problem was significant as coworkers were also affected, and worry about the cost of treatment. Patients with work-related dermatitis were more likely to have been seen in a workplace clinic and less likely to have been referred by an allergist. Those with work-related problems tended to have shorter duration of symptoms and wait times for the occupational health clinic. Otherwise, there was no significant difference in either duration from onset of symptoms to patch testing or estimated wait times.

DISCUSSION

The results of this study provide information about the journey of individuals with CD and work-related CD through the health care system in Ontario. The results contribute to clinicians’ understanding of the typical course and duration of treatment dermatitis patients have before presenting for patch testing. The results confirm that there are often long periods between onset of symptoms

TABLE 4. Demographic Information—by Work-Related Diagnosis (n = 149)

	Not Work-Related (n = 92), %	Work-Related (n = 57), %
Age > 45 y	63	40*
% Female	79	44*
Patient reported having a drug benefit plan	65	63
Modified work suggested	9	51*
Postal code—greater Toronto area	90	63*
Diagnosis		
ACD	37	49
ICD	7	79*
AD	25	14

* $P < 0.05$.

TABLE 5. Initial Presentation by Work-Related

	Not Work-Related (n = 92), %	Work-Related (n = 57), %
Wait time until first seeking care < 3 mo	54	56
Reasons for waiting to seek care		
Thought symptoms would get better	76	73
Did not think symptoms serious enough	42	47
Symptoms were not limiting ability to work	24	35
Symptoms were not limiting regular activities outside of work	28	19
I was concerned about missing work for appointments	8	20*
Thought symptoms natural consequence of work	6	18*
I was concerned about losing my job	1	20*
Coworkers had similar symptoms—did not think it was a big deal	3	17*
I was worried seeking medical attention would lead to conflict with employer	5	11
I worried about the cost of treatment	3	11*
I did not think a doctor would be able to help me	4	7
I was anxious about my symptoms and preferred not to have them looked into	3	9
Where patient was first assessed		
Family physician	72	56
Work-in clinic	14	24
Emergency department	6	5
Workplace clinic	0	13*
Referral to a dermatologist before coming to patch test clinic	84	82
If saw a dermatologist, wait time < 3mo	71	59
Had seen an allergist	22	7
Source of referral to patch test clinic		
Dermatologist	64	58
Allergist	20	0*
Family physician	12	14
Workplace Safety and Insurance Board	0	24
Length of wait time to patch test clinic appointment < 3 mo	48	63

* $P < 0.05$.

and definitive diagnosis due to patient delay, diagnostic delay, and wait times. There is information in the literature regarding duration of disease before investigation and diagnosis; however, there is substantial variation between studies related to the clinical problem (eg, hand eczema in general vs occupational dermatitis), the exposures (eg, a specific exposure vs a broad patch test clinic population with many different exposures), and also the point of health care (eg, first consultation vs assessment with patch testing and definitive diagnosis). This variation makes comparisons between studies difficult.

In this study, the mean wait time between onset of symptoms and patch testing was 61 months for the entire study population. Two previous studies from the same clinic reported a mean of 25 months from onset of rash to patch testing for patients with work-related disease versus 40 months from onset of rash to patch testing for patients with possible ACD, both work-related and non-work-related.^{7,15} Rusca et al⁸ reported time to first assessment of 8.6 months for patients with occupational dermatitis, whereas Duarte et al¹⁶ reported a range of 2 to 312 months with a median of 12 months for occupational CD. Hald et al⁹ reported a duration from eczema onset to consulting a general practitioner of 1.4 years and dermatologists 2.1 years for patients with hand eczema; the

average duration between onset of the dermatitis and patch testing was 49 months with a median of 18 months.

Another way of reporting time delay is using time intervals. Rusca et al⁸ provided information in this format finding that 62% of dermatitis patients studied delayed care for less than or up to 2 months, whereas 38% delayed care for more than 2 months. In our study, 55% reported seeking care from a primary health care provider within 3 months of onset of symptoms.

There is a paucity of literature addressing reasons dermatitis patients seek, or delay seeking, care. Hald et al⁹ found an association between condition severity and seeking care with an odds ratio of 2.9 for those with moderately severe disease seeing their general practitioner and 3.4 for seeing their dermatologist compared with those whose skin was almost clear. The odds ratios increased to 30.7 and 5.4, respectively, when those with severe disease were compared with those whose skin was almost clear.

Rusca and colleagues⁸ examined the reasons for patient delay in a cohort of hairdresser patients with occupational dermatoses. They found 62% mentioned fear and anxiety, with fear of job loss (39%) and being made redundant (28%) being the main reasons. Almost half thought their disease did not warrant seeking care. A very small percentage had other reasons including time constraints, language

difficulties, or negative experiences with physicians. This study found different reasons for initial delay, most commonly the disease was not serious enough or the patient thought it would get better.

This study provided an opportunity to compare those with work-related and non-work-related dermatitis. There was no difference related to wait times for initial assessment. Those with work-related dermatitis did differ in some of the reasons for delaying care, including thinking the symptoms were a natural consequence of work or age, concern about missing work for appointments, concern about losing their job, not thinking the problem was significant as coworkers were also affected, and worry about the cost of treatment. Several of these reasons relate to possible workplace consequences (concern about missing work for appointments, concern about losing their job), but others relate to assumptions about the nature of the problem as a reason to delay seeking care (natural consequence of work or age, not thinking the problem was significant as coworkers were also affected). Problems stemming from assumptions about the nature of the problem may be amenable to workplace education, and specifically education on the importance of seeking care because a longer duration of symptoms before assessment results in poorer outcomes.

A limitation of this study is the degree of detail regarding the patient's journey through the health care system, and specifically the number of times each type of physician was seen and time intervals between these visits; however, it is unlikely that individuals could recall this information accurately given the time frames involved. Our previous study documented multiple physician visits and types of physicians seen.⁶ Future research could use administrative health care data to explore dermatitis patients' health care journey in this level of detail.

The population characteristics outlined in this study are consistent with a similar study performed at the same clinic in 1994, in which it was found that individuals with occupational CD were more likely to be young, men, and have ICD.¹⁷ This is a useful measure of the constancy of the makeup of workers with work-related CD that may be helpful from a planning perspective.

CONCLUSIONS

The results of this study provide useful information on the health care utilization patterns of CD patients and demonstrate that many wait a significant period between the onset of symptoms and being patch tested. The results also highlight the different referral sources; although referrals most commonly are from dermatologists, patients are also referred by allergists and family physicians including those working in walk-in clinic settings, therefore educational efforts related to early referral need to be widespread. The main motivators for patients seeking care were their symptoms becoming bothersome, not getting better/getting worse, or

interfering with work and non-work activities. Education of patients on the importance of early diagnosis and treatment of CD, including work modification for occupational cases, could decrease time between symptom onset and seeking health care and, in turn, potentially improve outcomes.

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