Effect of Patch Testing on the Course of Allergic Contact Dermatitis and Prognostic Factors That Influence Outcomes

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Background: **Allergic contact dermatitis (ACD) has been shown to adversely affect the quality of life of patients.**

Objective: **The aim of the study was to study the effect of patch test on the severity of dermatitis, the quality of life of patients, and the prognostic factors influencing the outcome.**

Methods: **The study included 111 patients patch tested with the preliminary diagnosis of ACD. Patients with clinically relevant positive patch test reactions were included in the ACD group. All patients were assessed with the Investigator Global Assessment and the Dermatology Quality of Life Index before and 6 months after patch testing.**

Results: **At the sixth-month control, more significant regressions in the mean Investigator Global Assessment and Dermatology Quality of Life Index scores were noted in the ACD group. The allergens were correctly remembered by 75% of the patients. The improvement was more significant in patients with ACD who correctly remembered the allergens and made appropriate lifestyle changes. Multiple allergen positivity was identified as a poor prognostic factor.**

Conclusions: **The effect of patch test on the prognosis of contact dermatitis depends not only on providing necessary information to patients but also on the number of positive reactions, patient's ability to recall the allergens, how much the avoidance was achieved, and patient-related factors such as sex.**

The patch test is the criterion standard method for diagnosing allergic contact dermatitis (ACD) correctly. Improvement in the quality of life (QoL) of patients after patch testing has been shown in a limited number of studies.[1–4] However, the attitude of patients after receiving the necessary information about positive reactions, how well they remembered their test results, and their perceptions of the usefulness of patch testing have not been studied in detail. In our study, we evaluated the impact of patch testing on eczema severity and the QoL of patients by using the global physician assessment and the Dermatology Life Quality Index (DLQI). We also aimed to identify the prognostic factors affecting the clinical outcome, the long-term recall of detected allergens, to what extent avoidance of allergens could be achieved, and the patient's satisfaction with the procedure.

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The study was carried out on consecutively patch tested patients for the evaluation of contact dermatitis.

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PATIENTS AND METHODS

The study was approved by the ethical committee of Ankara University Faculty of Medicine (46004091-302.14.06/E.3641).

The study included 111 patients who had presented to the Department of Dermatology, Ankara University Faculty of Medicine and had been patch tested with the preliminary diagnosis of ACD. The age, sex, and occupation of the patients were recorded, together with the duration and localization of the lesions. The localization of the lesions was classified as the face, hands, hands and feet, generalized, and other localizations. Objective clinical assessment of dermatitis severity was determined and scored according to the Investigator Global Assessment (IGA) on a scale of 0 to 5 (0: clear, 1: almost clear, 2: mild disease, 3: moderate disease, 4: severe disease, 5: very severe disease) (Table 1).[5]

Before patch testing, all patients were asked to complete the DLQI, which is a 10-item questionnaire covering the impact of dermatitis on the QoL for the past week.[6] Turkish translation and validation of DLQI had been performed previously by Ozturkcan et al.[7] Each question is rated from 0 to 3, and the maximum DLQI score is 30. The higher the score, the higher the impairment of QoL, with a score of higher than 10 indicating a massive impact on QoL.

All patients were tested with the European baseline series (Chemotechnique Diagnostics, Vellinge, Sweden), supplemented with special series and patient-supplied products when indicated.

The allergens were applied with Van der Bend Chambers to the upper back of the patients. The strips were removed at the 48th

TABLE 1. Investigator Global Assessment

0	Clear	No Residual Visible Dermatitis
1	Almost clear	Minimal erythema and/or scaling
2	Mild disease	Clearly visible signs of dermatitis (erythema and scaling), with no hyperkeratosis, edema, fissures, or functional impact
3	Moderate disease	Moderately severe signs of dermatitis, with a few fissures and moderate functional impairment
4	Severe disease	Marked signs of dermatitis, with edema, fissures, or functional impairment
5	Very severe disease	Marked signs of dermatitis with exudation/crusting and very severe functional impairment

hour, and reading was performed after 30 minutes. The sites were reexamined at the 96th hour. The results were evaluated according to the scoring system recommended by the International Contact Dermatitis Research Group.[8]

The patients were divided into 2 subgroups according to the results of their patch tests. The patients with clinically relevant positive patch reactions were included in the ACD group, whereas those with negative patch test results and those with positive reactions in whom no clinical correlation could be demonstrated were included in the control group. The number of positive reactions and their occupational relevance were recorded in the patients with ACD.

After patch testing, detailed information was given to all patients with positive patch test reactions about the importance and necessity of elimination of the allergens and the precautions they should take. Written information about the allergens was also supplied to the patients including the list of products containing the allergens and alternative products that can be used safely. The patients with negative patch test reactions were also informed about general skin care with an emphasis on avoidance of irritants.

Six months after patch test, all patients were invited to a follow-up visit, and the IGA and DLQI scores of both the patients with ACD and the control patients were determined. The patients with ACD were also interviewed about whether they remembered the names of the allergens, whether they had been able to avoid allergen-containing products, and/or whether they had made necessary lifestyle changes. The patients with occupational ACD were also evaluated regarding job change, together with precautions they had taken. The opinions of the patients about the severity of their eczema and the benefit of patch testing were also recorded in an evaluation form.

Statistical Analysis

Statistical Package Program for the Social Sciences for Windows, version 20.0 (IBM, Armonk, NY) was used for the statistical evaluation of the data. The parameters measured at the level of proportioning were summarized in the form of mean ± SD, whereas the parameters measured at the level of classification and ranking were summarized in the form of number and percentage. Whether there is a statistically significant relationship among the results was evaluated by using the Mann-Whitney U test, the t test, and the Fisher test. The comparison of the groups was conducted by 1-way variance analysis/Friedman test. $P < 0.05$ value was considered as statistically significant.

RESULTS

Of the 111 patients, 60 (54%) were female and 51 (46%) were male. The ages of the patients ranged from 18 to 72 years (mean ± SD age = 43.6 ± 15 years). Positive patch test reactions against 1 or more allergens were noted in 71 patients. Of the 71 patients with patch test positivity, a clinical correlation was shown in 57 patients, and these patients were included in the ACD group. The remaining 54 patients, including the patients with no positive reactions, and the patients with positive reactions without any clinical correlation, formed the control group. Six patients in the ACD group and 3 patients in the control group who failed to present at the 6-month follow-up visit were excluded from the study. The results of the remaining 51 patients in the ACD group and 51 patients in the control group were evaluated.

The data including age, sex, atopy history, and educational status, together with the duration and localization of the dermatitis, are shown in Table 2. The ACD patient group and the control group did not have any statistically significant difference regarding age, sex, duration of dermatitis, and educational background; however,

TABLE 2. Characteristics of the Patient Groups

	ACD Group	Control Group	*P*
Age, mean ± SD	43.6 ± 13.9	45.6 ± 14.5	0.506
Sex, female/male	26/25	31/20	0.213
Atopy history, n (%)	4 (7.8)	14 (27.5)	0.009*
Educational background, n (%)			0.702
Junior high school	20 (39.2)	24 (47.1)	
High school	16 (31.4)	13 (25.5)	
University	15 (29.4)	14 (27.5)	
Duration of dermatitis, mean ± SD, mo	66.5 ± 107	51.1 ± 100.8	0.483
Localization of dermatitis, n (%)			
Face	6 (11.8)	4 (7.8)	0.075
Hands	16 (31.4)	23 (45.1)	0.061
Feet	4 (7.8)	1 (2)	0.023*
Hands-feet	1 (2)	7 (13.7)	0.027*
Other	10 (19.6)	11 (21.6)	0.801
Generalized	10 (19.6)	5 (9.8)	0.031*
Mucosa	4 (7.8)	0 (0)	0.00003*

**Statistically significant ($P < 0.05$).*

TABLE 3. Baseline and 6-Month Follow-up IGA Scores

	Baseline IGA (Mean ± SD)	6-mo IGA (Mean ± SD)	Difference, Mean ± SD	*P*
ACD group	3.51 ± 0.94	1.71 ± 1.37	1.60 ± 1.68	0.001*
Control group	3.10 ± 0.91	2.55 ± 0.99	0.35 ± 1.15	
One antigen positivity	3.0 ± 1.0	0.5 ± 0.7	2.10 ± 1.14	0.024*
Multiple antigen positivity	4.0 ± 0.83	2.9 ± 1.5	1.02 ± 1.81	
Patients who recall allergens	3.70 ± 0.90	1.49 ± 1.26	2.0 ± 2.1	0.0003*
Patients who cannot recall allergens	3.00 ± 1.00	2.38 ± 1.13	0.54 ± 0.92	
Patients who changed occupation	4.0 ± 0.46	0.5 ± 1.07	3.0 ± 0.80	0.001*
Continued working with preventive measures	3.80 ± 0.69	1.0 ± 0.94	2.04 ± 0.84	
No change in occupation	3.0 ± 0.83	3.50 ± 1.30	−0.2 ± 1.73	
Patients who made necessary lifestyle changes	3.79 ± 0.83	1.04 ± 0.65	2.65 ± 0.82	0.0002*
Partial changes	3.23 ± 0.96	1.93 ± 0.88	1.20 ± 0.86	
No change	2.9 ± 1.05	3.57 ± 0.87	−0.4 ± 5.29	

**Statistically significant ($P < 0.05$).*

the rate of the presence of atopy history was significantly higher in the control group. Hands were the most frequent localization in both groups. The numbers of the patients with feet involvement only and the patients with generalized dermatitis were significantly higher in the ACD group ($P = 0.023$, $P = 0.031$), whereas the number of patients with hands and feet involvement was significantly higher in the control group ($P = 0.027$).

The most common positive patch test reactions in the ACD group were to nickel sulfate (23.5%), potassium dichromate (19.6%), cobalt chloride (13.7%), thiuram mix (11.7%), fragrance mix II (11.7%), paraphenylenediamine (11.7%), neomycin (9.8%), fragrance mix I (7.8%), and Methylchloroisothiazolinone/Methylisothiazolinone (7.8%). Twenty-five patients in the ACD group (49%) had more than 1 allergen positivity; of these patients, positive patch test reactions against 1, 2, and 3, or more additional allergens were noted in 14 (56%), 8 (32%), and 3 patients (12%), respectively.

Occupational relevance was detected in 23 patients (45%). Most common occupations were construction workers, followed by hairdressers and food industry workers; potassium dichromate, thiuram mix, and paraphenylenediamine were the most frequently encountered relevant antigens.

In the control group, lesions were most commonly attributed to irritant contact dermatitis (37.25%), followed by atopic dermatitis (21.56%), dyshidrotic dermatitis (7.84%), nummular dermatitis (7.84%), and lichen simplex chronicus (5.88%).

Baseline IGA and DLQI Scores

The mean ± SD baseline IGA and DLQI scores of the patients with ACD were 3.51 ± 0.94 and 13.67 ± 5.88, respectively. In control patients, the mean ± SD baseline IGA and DLQI scores were 3.10 ± 0.91 and 10 ± 3.00, respectively. No statistically significant difference was detected between the mean IGA scores; however, the mean baseline DLQI score was significantly higher in the ACD patient group than in the control group ($P = 0.012$).

The IGA and DLQI Scores at the 6-Month Follow-up Visit

At the 6-month follow-up visit, the mean ± SD IGA and DLQI scores of the patients with ACD were 1.71 ± 1.37 and 6.86 ± 4.05, respectively, indicating a significant reduction in dermatitis severity and a significantly positive influence on the QoL (Tables 3, 4). In the control group, although improvements of IGA and DLQI scores

TABLE 4. Baseline and 6-Month Follow-up DLQI Scores

	Basal DLQI, Mean ± SD	6-mo DLQI, Mean ± SD	Difference, Mean ± SD	*P*
ACD group	13.67 ± 5.88	6.86 ± 4.05	6.20 ± 7.49	0.0003*
Control group	10.0 ± 3.00	9.51 ± 3.06	0.65 ± 4.57	
One antigen positivity	12.6 ± 5.5	4.0 ± 2.6	8.21 ± 6.63	0.009*
Multiple antigen positivity	14.0 ± 6.4	9.80 ± 6.6	4.18 ± 7.47	
Patients who recall allergens	14.14 ± 5.61	5.15 ± 5.43	8.15 ± 10.0	0.003*
Patients who cannot recall allergens	11.09 ± 7.47	11.84 ± 7.25	−0.57 ± 2.93	
Patients who changed occupation	16.0 ± 2.94	2.0 ± 4.31	15.0 ± 7.07	0.002*
Continued working with preventive measures	15.0 ± 6.13	4.0 ± 5.83	11.5 ± 4.50	
No change in occupation	10.0 ± 5.36	14.00 ± 4.30	−1.0 ± 3.71	
Patients who made necessary lifestyle changes	14.90 ± 4.68	4.06 ± 2.04	6.45 ± 5.23	0.0002*
Partial changes	11.32 ± 6.77	8.15 ± 5.34	3.54 ± 2.81	
No change	11.36 ± 7.57	14.00 ± 5.29	−1.6 ± 5.02	

**Statistically significant ($P < 0.05$).*

were noted and compared with those of baseline scores, both the mean ± SD IGA (2.55 ± 0.99) and mean ± SD DLQI scores (9.51 ± 3.06) were significantly higher than the ACD group.

The results were evaluated regarding the number of positive patch test reactions for assessment of the influence of multiple antigen sensitivity. At the 6-month follow-up, the mean ± SD IGA and DLQI scores of the patients with single-allergen positivity (0.5 ± 0.7 and 4.0 ± 2.6, respectively) were significantly lower than those of patients with more than 1 allergen positivity (2.9 ± 1.5, 9.8 ± 6.6, respectively) ($P = 0.0003$). The differences between the initial visit and the 6-month follow-up regarding the mean IGA and DLQI scores were also significantly higher in the patients with single-allergen positivity ($P = 0.024$, $P = 0.009$) (Tables 3, 4).

Patients' Opinions About the Severity of Their Lesions at the 6-Month Follow-up Visit

Of the 51 patients in the ACD group, 27 (52.9%) reported total clearing of their lesions, whereas 9 (17.6%) reported partial clearing, 7 (13.7%) reported no change in the severity of the lesions, and 8 (15,7%) claimed that the lesions had gotten worse. On the other hand, in the control group, only 5 patients (9.8%) reported total clearing of the lesions, whereas 24 (47.1%) reported partial clearing, 17 (33.3%) reported no change, and 5 (9.8%) reported an increase in lesion severity. The number of patients who had complete clearing was significantly higher in the ACD group ($P = 0.0002$), and the numbers of patients with partial clearing and with no change in the severity of the dermatitis were significantly higher in the control group ($P = 0.022$, $P = 0.016$, respectively).

Recall of Allergens

Of the 51 patients in the ACD group, 38 (74.5%) recalled the allergens at the 6-month follow-up visit. Twenty-four patients (63%) recalled the names of the allergens, whereas 14 patients (37%) recalled the substance group. The factors affecting the recall of allergens are presented in Table 5.

The patients with higher baseline IGA and DLQI scores recalled the allergens at a significantly higher rate when compared with those with lower scores ($P = 0.036$, $P = 0.041$, respectively).

Of all, 84% of the female patients and 64% of male patients recalled the allergens. The female patients' ability to recall the allergens was significantly higher than that of the male patients ($P = 0.043$). However, the patient ability to recall allergens was found to be independent of age and educational background.

The percentages of patients who could recall 1, 2, or more than 2 allergens were 71.42%, 37.5%, and 33.3%, respectively. Correlated with the increase in the number of allergens, the number of patients who could recall all allergens decreased.

The mean IGA and DLQI scores at the 6-month follow-up visit were significantly lower in patients who could recall the allergens. No significant change of mean IGA scores was noted in patients who could not recall the allergens, whereas their mean DLQI scores were increased compared with baseline.

TABLE 5. Factors Affecting Recalling Allergens

	No. Patients	Patients Who Recall the Allergens, n (%)	*P*
Age, y			
<40	24	17 (70)	0.330
≥40	27	21 (77)	
Sex			
Female	26	22 (84)	0.043*
Male	25	16 (64)	
Education			
Junior high school	20	15 (75)	0.124
High school or higher	31	23 (74)	
Baseline IGA			
0–2	20	11 (55)	0.036*
3–5	31	27 (87)	
Baseline DLQI			
0–5	25	16 (64)	0.041*
6–30	26	22 (84)	
No. positive allergens			
1	26	21 (80%)	0.046*
>1	25	17 (68%)	

*Statistically significant ($P < 0.05$).

Avoidance of Allergens and Adoption of Necessary Lifestyle Changes

Of the 51 patients with ACD, 29 (56.9%) were able to avoid allergens and make necessary lifestyle changes during the 6-month follow-up period. Nine patients (17.6%) reported that they were still not checking the ingredients before buying personal care products and that they were not able to avoid contact with the responsible allergens. In the remaining 13 patients (25.5%), avoidance and protective measures were not enough, although the patients remembered the information given about necessary precautions.

The most significant reductions in the mean IGA and DLQI scores were obtained in the patients who were able to avoid allergens ($P = 0.030$, $P = 0.002$, respectively). On the other hand, the IGA and DLQI scores of the patients whose contact had continued with the allergens were found to be increased compared with the baseline values (Tables 3, 4).

Change of Occupation

In our study, 23 patients (45.1%) had occupational ACD. During the 6-month follow-up period, 8 patients had changed their jobs (34.9%), 10 had continued working by taking preventive measures (43.4%), and 5 had continued working without any prevention (21.7%).

At the 6-month follow-up visit, the IGA and DLQI scores of the patients who had changed their jobs were significantly lower than those patients who had continued working at the same job with or without prevention. The IGA and DLQI scores of the patients who had worked without prevention were even higher than the baseline values (Tables 3 and 4).

The Opinions of the Patients in the ACD Group About the Benefit of Patch Testing

At the 6-month follow-up visit, 37 patients reported that they had benefited from patch testing (72.5%), 8 (15.7%) claimed that it was not beneficial, and 6 patients (11.8%) were uncertain about the benefit of the procedure.

Thirty-one patients (60.8%) stated that they had found the given written and verbal information satisfactory, 17 (33.3%) reported that it was partially satisfactory, and only 3 (5.9%) expressed that the information was not sufficient.

DISCUSSION

The patch test enables the identification of responsible allergens in ACD and improves healing of the lesions and QoL of patients by avoidance of allergens. However, the choice of allergens tested, the proper evaluation of patch test results with particular emphasis on clinical relevance, and the information provided to the patients about positive reactions influence the positive effect of patch test on the prognosis. The recall of allergens by patients and the adoption of the necessary lifestyle changes also determine the effect of the procedure.[2,4,9–14]

In our study, the ACD patients with clinically relevant patch test reactions were compared with the control group with the purpose of evaluating the effect of patch test on the clinical course of contact dermatitis. No difference was noted between the ACD group and the control group regarding age, sex, and duration of disease. However, the rate of positive atopy history was significantly higher in the control group. The main reasons for this finding were attributed to the presence of patients with atopic dermatitis who had been patch tested for possibly associated ACD and to the fact that irritant contact dermatitis is more frequently found in atopic patients. The hands were the most frequently affected site in both groups. Facial and generalized distributions were more common in the ACD group, and involvement of the hands and feet was more common in the control group. Our findings were in agreement with those of the North America Contact Dermatitis Group, which indicated the hand, face, and generalized involvement as the most frequent localizations of ACD.[15]

Before patch testing, the ACD and control groups were comparable regarding IGA scores; however, the mean baseline DLQI score was significantly higher in the patients with ACD. At the 6-month follow-up visit, the mean IGA and DLQI scores regressed in both the ACD patient group and the control group; however, in accordance with previous studies, the improvement was significantly higher in the ACD group.[1–3,16] Improvement of dermatitis in the control group was most probably due to instructions about general skin care, avoidance of irritants, and routine application of emollients.

The beneficial impact of patch testing on DLQI score in patients with ACD has been shown previously in a limited number of studies.[1–4] However, a small number of studies have evaluated the impact of patch testing on the QoL of patients in whom clinical relevance was shown to be present. Thomson et al[2] showed an improvement of QoL in patients with relevant positive patch test reactions at the 2-month follow-up, compared with patients with negative patch test results; 89% of their patients stated that they felt they had been able to avoid the relevant allergens.

In previous studies, multiple antigen positivity was detected in 58% to 63% of patients, and it was shown to be associated with an adverse effect on prognosis.[9,11,17] In our study, 49% of the patients with ACD had more than 1 antigen positivity, and in these patients, improvements of IGA and DLQI scores were significantly less when compared with the patients with a single positive reaction. This result was expected because as the number of positive reactions increases, elimination of antigens gets harder, and more extensive lifestyle changes are needed.

There are a limited number of studies evaluating the recall rates of antigens. In these studies, the percentage of patients who remembered the antigens ranged from 29% to 97%. This wide variation can be attributed to the differences regarding the follow-up period in these studies, which ranged from 6 weeks to 10 years.[2,10–13] Jamil et al[10] demonstrated a negative correlation between the ability of the patient to remember antigens and the number of years after testing. On the other hand, in a study conducted on patients with occupational contact dermatitis with a 2-year follow-up, the recall rate was 87%. In that study, all patients had occupationally relevant allergen positivity, and as the authors pointed out, financial compensation given to the patients having occupational contact dermatitis in Denmark, together with job change due to allergy, could have played a role in such a high remembrance rate.[13]

In the literature review, recall of antigens was found to be lower in patients who were male,[8,12] older than 60 years,[13] with low educational level,[14] and encountering multiple antigen positivity.[10,12,13]

In our study, among the 51 patients in the ACD group, 38 (74.5%) recalled the allergens at the 6-month follow-up visit, and these patients had a significantly higher reduction in their IGA and DLQI scores at 6 months. Although there was no correlation between recall status, age, and educational level ($P = 0.330$, $P = 0.124$, respectively), a negative correlation was detected between low basal IGA, DLQI scores ($P = 0.016$, $P = 0.038$), male sex ($P = 0.043$), and more than 1 antigen positivity ($P = 0.001$). Although patients with high educational level are expected to interpret the patch test results better, to remember the antigens, and to make appropriate lifestyle changes, no effect of educational background on allergen recollection was found in our study. This could be the result of the clear and straightforward language used while giving information about patch test results and necessary precautions.

In our study, the patients with higher baseline IGA and DLQI scores also recalled the allergens at significantly higher rates than those with lower scores. Our results, in agreement with those reported by Brok et al,[13] indicate that patients with more severe dermatitis at the time of patch testing and patients who experience the more significant impact of dermatitis on QoL are more likely to remember the allergens.

Although patch test is expected to make a significant improvement in the QoL of the patients, avoidance can be very difficult to achieve especially in patients who have a sensitivity to antigens that are abundant in the environment. In our study, 56.9% of the patients had succeeded in avoiding antigens, and these patients had the most significant improvement in IGA and DLQI scores. In previous studies conducted by sending questionnaires to the patients, appropriate lifestyle changes and antigen avoidance were reported in 50% to 91% of the patients with subsequent improvement in DLQI scores.[1,2,11,12] These results have shown that routine follow-up of ACD patients with emphasis on evaluation for allergen avoidance and recall of antigens is needed for improvements of eczema severity and QoL.

The effect of job change on occupational skin disease has been investigated in several studies. Most of these studies, which were focused on occupational hand dermatitis in general and not on occupational ACD, have indicated the positive effect of job change on the severity of hand eczema.[18–24] On the other hand, contradictory results have also been reported. Some studies have shown less favorable results and persistent hand dermatitis despite quitting the occupation.[23,25–27] Clemmensen et al[28] followed up 199 patients with occupational ACD for 2 years. At follow-up, 27% of the patients had changed jobs, and 32% were not employed. A significant positive association between job change and improvement was found.[28] In our study, 34.9% of the patients with occupational contact dermatitis had changed jobs or had quit working after patch test; however, most of our patients continued working because of economic problems and inadequacy of legal regulations in our country. The follow-up duration of 6 months might also not have been sufficient for a job change. In all, most noticeable reduction in IGA and DLQI scores was obtained in patients with occupational contact dermatitis, who had quit or changed jobs, since most of these patients were sensitized to occupationally relevant antigens such as potassium dichromate and rubber allergens, which were easier to avoid in everyday life. Contrary to our findings, Carøe et al[29] have recently shown an adverse effect of job change on health-related QoL of patients despite improvement of occupational hand eczema. The authors attributed this adverse effect on QoL to the mental stress associated with a job change.

At the 6-month follow-up visit, patient perception regarding the benefit of patch testing was also evaluated. The procedure was claimed as useful by 72% of our patients; however, 16% of the patients reported that patch testing had not been beneficial, and the remaining 12% were uncertain about the procedure. Although these uncertain patients had noticed the beneficial effect, they claimed that the necessity to check each item caused uneasiness and great difficulty in their lives. Our results were very similar to the results obtained in previous studies in which 72% to 89% of patients were satisfied with the procedure.[4,11,12,14,16]

The information we had given about the positive patch test results and the necessary precautions to avoid products containing allergens was found useful by 94% of the patients. This ratio was similar to the result found in the study conducted by Scalf et al[12] but higher than the results reported in the studies conducted by Woo et al[1] and Lewis et al,[11] in which 37% and 28% of patients did not find the information enough. Our high result might have been due to the written and verbal information that we had provided concomitantly to our patients.

Most of the previous studies evaluating the effect of patch test on the prognosis of ACD were questionnaire surveys. In our prospective study, all patients were evaluated by IGA and DLQI at the time of patch testing and again after 6 months. Six-month follow-up period is a limitation of our study. Evaluation of patients with clinically relevant positive patch test reactions for an extended period may be required to see how the results will change accordingly.

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