Inpatient treatment for severe atopic dermatitis in a Traditional Korean Medicine hospital: Introduction and retrospective chart review

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KEYWORDS
Atopic dermatitis; Hospitalisation; Traditional Korean Medicine; Herbs; Acupuncture; SCORAD

Summary
Objectives: Patients with atopic dermatitis increasingly seek complementary and alternative medical treatment. A number of studies have demonstrated the efficacy of herbs and acupuncture in the treatment of atopic dermatitis. Some patients with extensive disease, outpatient treatment failure, acute deterioration or highly impaired everyday functioning require inpatient care. The aim of this study was to introduce and evaluate inpatient treatments for severe atopic dermatitis patients at a Traditional Korean Medicine hospital.

Design and subjects: We performed a retrospective chart review of inpatients with severe atopic dermatitis between March 2008 and October 2011. Eligibility criteria for inclusion were: (1) a diagnosis of atopic dermatitis according to the criteria established by Hanifin and Rajka and (2) hospitalisation because of severe atopic dermatitis (objective scoring atopic dermatitis (SCORAD) score ≥ 40).

Main outcome measurement: The SCORAD score was assessed by trained investigators at admission and discharge.

Results: Among 37 inpatients, there were 29 patients who met the criteria. Patients received treatments including acupuncture, herbal medicine and herbal wet wrap dressings. The mean total scoring SCORAD decreased from 60.63 to 37.37 during hospitalisation. Despite the relatively small sample size, these findings were statistically significant.

Conclusion: In atopic dermatitis, Traditional Korean Medicine effectively decreased clinical disease severity. This study's weaknesses include the relatively small number of patients, some aspects of the study design, lack of follow-up assessment and lack of second measurement. © 2012 Elsevier Ltd. All rights reserved.

Introduction
While most cases of atopic dermatitis (AD) are effectively controlled with emollients and topical treatments in the outpatient setting, some patients with extensive disease, outpatient treatment failure, acute deterioration or highly
impaired everyday functioning require inpatient care. The aim of inpatient treatment for AD is not to provide complete clearance, but to improve the condition sufficiently to allow outpatient treatment. To date, there are few objective data about the effectiveness of inpatient treatment of AD in conventional medicine, but hospitalisation improves clinical disease symptoms in patients with AD. Complementary and alternative medicine (CAM) is becoming increasingly popular for the treatment of inflammatory skin diseases, especially AD, since effective medical treatments for AD are limited. At Traditional Korean Medicine (TKM) hospitals in Korea, patients receive acupuncture, herbal medicine and herbal wet wrap dressing daily during hospitalisation.

A number of randomised, controlled studies have demonstrated the efficacy of CAM in treating AD. However, no studies have reported the outcomes of inpatient treatment with CAM or TKM medicine. The aim of this study was to determine the effects of TKM hospitalisation on AD. We conducted a retrospective chart review of patients with severe AD treated at a TKM hospital. Objective and subjective scoring atopic dermatitis (SCORAD) scores were assessed at admission and discharge.

Methods

Patients

We performed a retrospective chart review of inpatients with severe AD treated in the Department of Oriental Dermatology, Kyung Hee University Hospital at Gangdong, College of Oriental Medicine, Kyung Hee University, Seoul, Republic of Korea between March 2008 and October 2011. The eligibility criteria for inclusion were: (1) diagnosis with AD according to the criteria established by Hanifin and Rajka and (2) hospitalisation for severe AD (objective SCORAD score ≥ 40).

This study was approved by the Institutional Review Board, Kyung Hee University Hospital at Gangdong. Informed consent was obtained from all patients, or from their parents or guardians for patients under 18 years of age.

Outcome measurements

To assess the efficacy of treatments, the severity of AD was evaluated using the SCORAD score (Fig. 1) on both admission and discharge day by a TKM doctor specialising in dermatology.

Treatment

Patients received treatments including acupuncture, herbal medicine and herbal wet wrap dressings. All treatments were prepared and administered by a practitioner who had completed a 6-year full-time didactic and practicum course in CAM, with further clinical and research experience in the same field for 20 years.

Acupuncture

Acupuncture needles (0.25 mm diameter and 40 mm length, Dong Bang, Gyeonggi-do, Korea) were manually inserted subcutaneously or intramuscularly. Needle retention time was 15 min. Acupuncture points included EX-HN3, LI4, LI11, TE5, ST36, SP6 and LR3 on both sides of the body. About 10 local points of acupuncture were also used on eczema lesions. Acupuncture treatment was provided twice per day during inpatient treatment.

Herbal decoction

The herbal medicine used was a decoction of plant material, including Rehmannia glutinosa, Talcum, Glycyrhiza glabra, Atractylodes chinensis, Plantago asiatica L., Gentiana scabra Bunge, Akebia quinata Decaisne, Raphanus sativus, Adenophora triphylla, Smilax china L., Scutellaria baicalensis Georgi and Angelica gigas. This herbal formula is known to be effective for reducing erythema, pruritus and exudates in AD and has no known hepatic or renal toxicities. We decocted 0–20 g of each plant material with purified water as a daily dose according to patient progress. This medication was administered three times per day, after each meal.

Herbal wet wrap dressing

Phellodendri Cortex is known to have antibacterial effects. This herb (dose; 30 g) was boiled with 1000 cm³ of purified water in a large, open pot and vacuum packed to form two packs of 120 cm³ for each treatment. Four or five layers of gauze were hydrated sufficiently with the decoction and applied immediately to the AD lesions, and Tubifast 2-way stretch or garments (Mölndycke Health Care, Göteborg, Sweden) were added and the dressings were worn by the patients for 20–30 min. Herbal wet wrap dressings were applied once or twice per day based on symptom severity (Fig. 2).

Concomitant medications

We allowed patients to use only emollients, lotions and ointments that do not contain steroids during hospitalisation. We requested patients not to use antihistamines, steroids or immune-suppressant treatment during hospitalisation. In the cases of patients who were using these medications prior to treatment, the TKM doctors decided whether to taper off or continue using this medication according to the patient’s condition. In five cases with uncontrolled itching, we consulted with allopathic medical doctors for antihistamine treatment. In one case with severe secondary infection, we consulted with allopathic medical doctors for antibiotic treatment.

Statistical analysis

Data were analysed using Statistical Package for Social Sciences (SPSS) version 13.0 for Windows (SPSS Inc., Chicago, IL, USA). Continuous variables were characterised using mean ± SD. A paired t-test was used to determine if there was a statistically significant change in the SCORAD score. Results were considered statistically significant at p < 0.05.
Results

Among 37 inpatients, there were 29 patients who met the criteria. Data were collected for 32 months, from March 2008 to October 2011. In total, 29 severe AD patients (objective SCORAD score ≥ 40) were admitted during the study period. Clinical characteristics of the study sample at baseline are summarised in Table 1.

Concomitant drug use during admission is summarised in Table 2. The mean SCORAD scores on admission and

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Clinical characteristics of 29 TKM inpatients with severe AD.</th>
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<tbody>
<tr>
<td>Gender (F/M)</td>
<td>12/17</td>
</tr>
<tr>
<td>Onset (infant/adult)</td>
<td>10/19</td>
</tr>
<tr>
<td>Family AD history (with/without)</td>
<td>9/20</td>
</tr>
<tr>
<td>Age (years)</td>
<td>18.45 (1–40)(^a)</td>
</tr>
<tr>
<td>Duration of AD (years)</td>
<td>6.53 (0.5–20)(^a)</td>
</tr>
<tr>
<td>Duration of admission (day)</td>
<td>9.79 (5–19)(^a)</td>
</tr>
</tbody>
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\(^a\) Median values (range) are shown.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Concomitant drug use during admission.</th>
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<tbody>
<tr>
<td>No use a month prior to admission</td>
<td>15</td>
</tr>
<tr>
<td>Used prior to admission and tapered before admission</td>
<td>9</td>
</tr>
<tr>
<td>Used during admission</td>
<td>6</td>
</tr>
<tr>
<td>Severe pruritus</td>
<td>5</td>
</tr>
<tr>
<td>Severe secondary infection</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
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discharge are summarised in Table 3 and Fig. 3. The mean total SCORAD score, objective SCORAD and subjective SCORAD scores decreased significantly (p < 0.001) during hospitalisation.

Cases

Case 1. An 18-year-old male with AD on the neck had an objective SCORAD score of 67.3 on the day of admission. During 12 days of hospitalisation, the objective SCORAD score decreased and was 36.3 on the day of discharge (Fig. 4(1) and (2)).

Case 2. A 39-year-old male with AD on the neck had an objective SCORAD score of 66.1 on the admission day. During 19 days of hospitalisation, the objective SCORAD score decreased and was 32.8 on day of discharge (Fig. 5(1) and (2)).

Case 3. A 25-year-old female with AD on the posterior thighs and buttocks had an objective SCORAD score of 71.6 on admission day. During 16 days of hospitalisation, the objective SCORAD score decreased and was 35.2 on day of discharge (Fig. 6(1) and (2)).

Case 4. A 1-year-old male with AD on the torso had an objective SCORAD score of 60.9 on admission day. During 10 days of hospitalisation, the objective SCORAD score decreased and was 51.1 on the discharge day (Fig. 7(1) and (2)).

Case 5. A 10-year-old male with AD on the neck had objective SCORAD score of 50.9 on admission day. During 5 days of hospitalisation, the objective SCORAD score decreased and was 24.3 on the discharge day (Fig. 8(1) and (2)).

Discussion

We performed this study to assess the efficacy of inpatient treatment of severe AD in a TKM hospital. Dermatological treatment is predominantly outpatient-based, mainly because outpatient care is less expensive than inpatient

<table>
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<th>Table 3</th>
<th>Mean total SCORAD, mean objective SCORAD and subjective SCORAD.</th>
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<td>Admission day</td>
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<tr>
<td>Total SCORAD</td>
<td>60.63 ± 11.82</td>
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<tr>
<td>Objective SCORAD</td>
<td>48.38 ± 9.49</td>
</tr>
<tr>
<td>Subjective SCORAD</td>
<td>13.60 ± 3.62</td>
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</table>

Values are mean ± SD.
In some cases, such as an acute systemic upset or severe inflammatory skin disease, outpatient treatment may be neither feasible nor appropriate. However, there is little published work regarding the effectiveness of hospitalisation.

Compared to outpatient treatment, inpatient treatment has a number of advantages. Topical therapies may be laborious, time consuming, messy and difficult to apply. As a skin condition becomes more extensive, more dedicated time and motivation is required, with a subsequent decrease in compliance in outpatient settings. The ward environment can provide social support and the opportunity for education from the staff. It can also reduce the burden on parents or caregivers.

Evidence of the effectiveness of inpatient treatment for AD has been shown in studies from the USA, UK and Germany. In these studies, significant improvements in quality of life and objective disease severity after hospitalisation have been shown to persist after discharge. A majority of patients believed they benefited from their admissions, during both the immediate post-discharge period and in the long term.

There has been a significant increase in the use of CAM in patients with AD due to dissatisfaction with some aspects of conventional treatment. A number of studies have demonstrated the safety and efficacy of herbal medicine for treating AD. Several recent studies have also investigated the use of acupuncture for itch reduction.
Pfab et al. demonstrated significant itch reduction after verum acupuncture or cetirizine treatment compared with placebos and no treatment, respectively, in AD patients.  

The ideal study design for assessing the effectiveness of TKM inpatient treatment would be a randomised clinical trial, rather than a prospective chart review. However, it is difficult to define an appropriate control group for
inpatient treatment, and therefore we conducted a retrospective chart review of inpatients.

This study included 29 patients with severe AD (objective SCORAD score $\geq 40$) who were hospitalised for approximately 9.79 days (5–19 days) and assessed by SCORAD scores on admission and discharge day. Inpatients received acupuncture, herbal medicine and herbal wet wrap dressing everyday during hospitalisation. Education about AD management was given to both patients and caregivers. Among the 29 patients, six patients used antihistamines or antibacterial agents during their admission. We allowed five patients to take antihistamines due to severe itching. One patient (case 2) received antibacterial therapy to treat sepsis. No steroidal agents were used by any patients during admission. The mean total SCORAD score decreased from 60.63 to 37.37 during hospitalisation. Despite the relatively small sample size, these findings were statistically significant.

This study has a number of limitations. Previous studies\(^1\)–\(^3\) assessed clinical disease severity using quality-of-life scales such as Dermatology Life Quality Index. However, we did not assess any quality-of-life measures. We did not conduct any follow-up assessments. In addition, as mentioned above, this was a retrospective chart review, and was essentially a pilot study that was completed in anticipation of a follow-up (prospective) study. However, this study expands upon previous research because it evaluates the efficacy of hospitalisation in severe AD patients. This is the first report describing the effectiveness of inpatient treatment in a TKM hospital.

Conflict of interest statement

No conflict of interest declared.

Acknowledgement

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References