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Efficacy of *ah shi* point acupuncture on acne vulgaris

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Abstract

Background *Ah shi* point acupuncture involves inserting needles at painful or pathological sites.

Objective To evaluate the efficacy of *ah shi* point and general acupuncture point treatment of acne vulgaris.

Methods 36 subjects were recruited and randomised in a double-blind (patient-blind and observer-blind) controlled trial to receive acupuncture either at general acupuncture points only, or at both general acupuncture points and *ah shi* points 12 times over 6 weeks. The subjects were evaluated using the following outcome measurements: an inflammatory lesion count, a quality-of-life scale (Skindex-29) and a subjective symptom score.

Results After 12 treatment sessions, there was a significant reduction in the inflammatory acne lesion counts, the Skindex-29 scores and the subjective symptom scores from baseline in both groups, but no significant difference between groups.

Conclusions Acupuncture treatment of moderate acne vulgaris was associated with reduction of inflammatory lesions and improvement of the quality of life.

INTRODUCTION

Acne is a common inflammatory disease of the pilosebaceous units in the skin, which often occurs in the facial, chest and back regions. It is due to an oversecretion of androgen, dyskeratosis of conduits of the sebaceous gland and microbial infection.[1 2]

Several preliminary studies have suggested that acupuncture may be effective in patients with acne.[3–7] The exact mechanisms of acupuncture in acne are unclear and may involve at least three key components—the hypothalamus–pituitary–adrenal axis, the autonomic nervous system and brain-derived neurotrophic factor.[8] Additionally, acupuncture may act as a modulator of the immune system as has been supported by a number of observations.[9 10]

Ah shi point acupuncture involves inserting needles at painful or pathological sites and was traditionally used for lancing furuncles.[11] We expected acupuncture treatment on papules and nodules (*ah shi* point) to reduce inflammation of the acne site directly. Therefore, we aimed to study the effect of *ah shi* point acupuncture on papules and nodules of acne vulgaris. Acupuncture treatment in this trial was reported in accordance with Standards for Reporting Interventions in Controlled Trials of Acupuncture recommendations.[12]

METHODS
Study population

We invited participants to participate in the study through announcements on the website of East–West Neo Medical Center and newspapers. This study was approved by the Institutional Review Board, Kyung Hee University, East-West Neo Medical Center. Informed consent was obtained from the patients—who were aged ≥18 years—after a thorough explanation of the procedure. For patients under 18, informed consent was obtained from the parents or guardians. Participants were restricted from receiving any other treatment for acne vulgaris during the study period.

Study criteria

From July to December 2009, we screened 68 applicants and enrolled 36 participants who met the following criteria: age >13 years, who had more than 10 papules and less than 10 nodules on the face (Korean Acne Grading System grade 2 or 3, as shown in table 1),[13] and who had had acne for more than 3 months (chronic stage). Patients who had used retinoids, antibodies or herbal medicine for acne were excluded. Those patients who had had chemical peeling, intense pulsed light or laser treatment within the past month were also excluded. Other exclusions included those patients who had papules or nodules mainly located on the chest or back, who were pregnant, who had other infectious skin diseases or those with internal diseases that required treatment without delay.

Study design

This study was a randomised controlled clinical trial. After enrolment, subjects were randomised into two groups according to a computer-generated table by a researcher who made the decision to include or exclude each patient. They received acupuncture at 24 classical acupuncture points (acupuncture group) or *ah shi* points plus 24 classical acupuncture points (acupuncture + *ah shi* point group) by an acupuncture provider (see figure 1).

The following points were treated bilaterally: ST2, ST6, ST36, LI20, LI4, LI11, PC6, HT8, SP3, SP6, SP10 and LR3. The points were selected based on previous studies of acupuncture treatment of acne.[3 14–16] Additional *ah shi* points were selected at papules and nodules on the face by the acupuncture provider. The *ah shi* points were selected in order by size and not allowed to exceed 30 points.

The following measures were recorded and analysed: patient's age, sex, duration of disease, previous treatment of acne and other past history.

The researcher who evaluated the participants did not know their group allocation and was not involved in their treatment. Both groups received acupuncture on the face, legs and arms and were informed that this study was about acupuncture treatment for acne in general, without any specific

details provided. Thus we believe expectations were the same in the two groups.

Acupuncture procedure

An oriental medicine doctor, who had worked as a first-year resident at the department of otolaryngology, ophthalmology and dermatology provided acupuncture needling to patients. Soft, spring handle needles 0.25 × 30 mm (DONG BANG Acupuncture, Chung-Nam, Korea) were used. No specific needle stimulation techniques were used and no specific response was obtained.

The needles were inserted at a vertical or oblique angle to a depth of 3 ± 2 mm at each acupuncture point in both groups, to minimise pain and retained in place for 15 min. The papules and nodules were not artificially extruded. Only patients with more than two treatments each week, for a total of 12 treatments over a 6-week treatment period, were included in the analysis.

Table 1 Korean acne grading system

Grade	Description
1	Papules* ≤10
2	Papules 11–30
3	Papules ≥31, nodules† ≤10
4	Nodules 11–20 ± mild ongoing scars
5	Nodules 21–30 ± moderate ongoing scars
6	Nodules ≥31 ± severe ongoing scars ± sinus tract

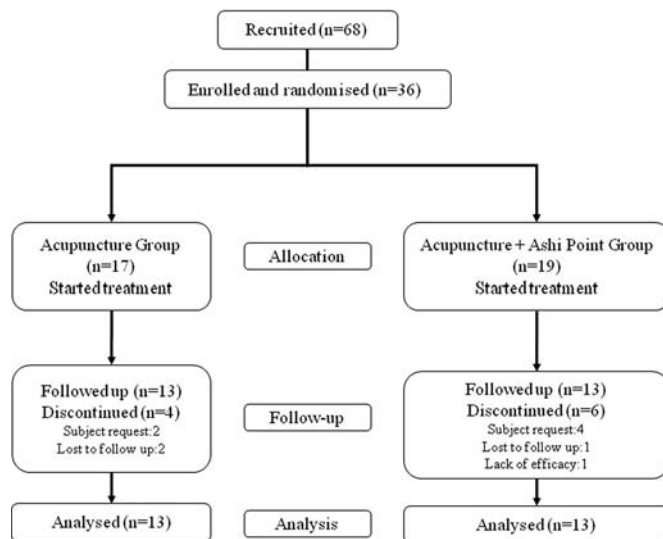*Papule: acne which is <5 mm; †nodule: acne which is >5 mm.

Figure 1 Flow chart of subjects treated.

Outcome measures

A digital camera (Nikon D50; Nikon, Tokyo, Japan) was used to take pictures of the patient's face so that the papules and nodules could be counted. The quality-of-life scale (Skindex-29) and the subjective symptom scores were obtained at the first session, then before the 4th, 7th and 10th treatment sessions and after the 12th session. Also, after the 12th session, satisfaction with the treatments was scored using a 1 to 5 grading scale: 1 (dissatisfied) to 5 (very satisfied). The Skindex is a self-administered questionnaire to comprehensively measure the complex effects of skin diseases on patients' quality of life. The questionnaire assesses areas considered essential in any instrument purported to assess quality of life: burden of symptoms, social function and emotional state. The 29-item version[17] is a refinement of a previous 61-item version.[18] For the subjective symptom score, after every 3rd session, participants were asked: 'How severe do you think your acne is? Please answer between 0 (which indicates there is no acne on the face) and 10 (which means that acne on your face is too severe for you to endure)'.

Monitoring adverse events

We monitored adverse events (pain on the acne lesion or other sites, nausea/vomiting, fatigue, allergic reaction and any adverse events related to acupuncture) after each acupuncture treatment.

Statistical analysis

Data are presented as mean ± SD. A paired t test was used to examine any significant difference in baseline data between the two groups. The generalised estimating equation was used for statistical analysis of the inflammatory lesion count and the subjective symptom score. An analysis of covariance was used to examine the significance of any difference in the Skindex-29 score because the baseline Skindex-29 scores between the two groups were significantly different. A p value of <0.05 was taken as the limit for statistical significance. SAS version 9.1 was used for the analyses.

RESULTS

Sixty-eight patients were interviewed and 36 patients met the inclusion criteria and were enrolled. Of the 36 patients, 26 completed treatment (13 in the acupuncture group and 13 in the acupuncture + *ah shi* point group).

The study group comprised 10 men and 16 women with a mean age of 26.1±7.3 years (table 2). Patients in the two groups were similar at baseline except for the Skindex-29 score. No adverse events were seen as a result of acupuncture treatment.

Inflammatory acne lesion counts reduced progressively by about half in both groups, as shown in table 3 and were signifi-

Table 2 Baseline demographics and clinical characteristics of participants

Characteristics	Acupuncture group	Acupuncture + *ah shi* point group	Total	p Value*
Age (years)	26.0±7.4	26.2±7.5	26.1±7.3	0.959
Gender				0.440
Male, n (%)	4 (30.8)	6 (46.2)	10 (38.5)	
Female, n (%)	9 (69.2)	7 (53.8)	16 (61.5)	
Inflammatory lesion counts	17.5±5.9	17.5±10.5	17.5±8.3	0.982
Skindex-29	64.8±14.6	47.2±16.8	56.0±17.8	0.009

*p Value from Student t test.

cantly decreased by the 12th session. There were no differences between the groups.

At baseline, there were significant differences in the Skindex-29 scores between the two groups; the scores were reduced significantly in both groups during the course of treatment, but there was no difference between groups(table 4).

Subjective symptom scores, shown in table 5, significantly decreased over the course of treatment, but there was no statistically significant difference between the two groups.

The mean final satisfaction scores were 4.0±0.6 for the acupuncture group and 3.5±0.9 for the acupuncture + *ah shi* point group, which are not significantly different (p=0.098).

DISCUSSION

In this study, we found that acupuncture treatment of moderate acne vulgaris was associated with reduction of inflammatory lesions and improvement of the quality of life. However, there was no statistically significantly greater effect in the group that received treatment directly to *ah shi* points.

Excessive sebum production secondary to sebaceous gland hyperplasia is the first abnormality to occur in acne.[19] Subsequent hyperkeratinisation of the hair follicle prevents normal shedding of the follicular keratinocytes, which then obstruct the follicle and form an inapparent microcomedo.[20] Lipids and cellular debris soon accumulate within the blocked follicle. This microenvironment encourages colonisation of *Propionibacterium acne*, which

provokes an immune response through the production of numerous inflammatory mediators. Inflammation is further enhanced by follicular rupture and subsequent leakage of lipids, bacteria and fatty acids into the dermis.

There have been several studies of herbal medicine or acupuncture for acne vulgaris. One study used acupuncture treatment for acne according to oriental medical diagnosis, using LI4, ST36, LR3, ST43 and ST44 for patients with indigestion and appropriate *Sa-am* acupuncture prescription for nervous patients. *Sa-am* acupuncture theory i\s a school of acupuncture initiated by Sa-am, characterised by applying the five phases theory and mother–child reinforcement–reduction principle to the selection of points and needling manipulation.[21 22]

LI4 and LI11 have been reported as being the most commonly used points in the treatment of facial acne.[23] Patients are usually treated either once a day or three times a week, for a total of 20–24 treatments. Following the strategies discussed above, treatment effectiveness is usually quite apparent.[14]

A study on facial diseases such as acne, acne rosacea, verruca and melasma using GB14, LI4, SP6, LI20 and GV23 at least twice a week reports that about 70% of cases show complete recovery and 20% show some degree of improvement.[3]

Overall, we can conclude that the traditional diagnoses of wind, heat, damp and insufficiency of lung, spleen or stomach are related to acne treatment, so we can treat acne using these meridians. According to symptoms and signs, we can choose from LI4, LI10, LI11, ST36, ST2, GV14, SP10, BL12, BL13, BL40, KI2, PC6, TE5, GB31, SP6, LR2 and LR3.

The 'Opposite needling' chapter of Su Wen (*Plain Questions*) relates that 'one should puncture the point where there is tenderness on compression'. The 'Twelve muscle meridians' chapter of Ling Shu (*Miraculous Pivot*) states that 'if there is pain at a point, that point is also a *Shu* point'. Wang Bing has defined the terminology 'ah shi point' as one in which 'regardless of whether the point is a *Shu* point or not, acupuncturing the point where the pathogenic factor resides can all be called (treating) *ah shi* points'.[24] According to the WHO international standard terminologies on traditional medicine in the Western Pacific Region, the *ah shi* point is an acupuncture point with no specific name or definite location, the site of which is determined by tenderness or other pathological responses, also known as the *ah shi* or 'ouch' point.[21] Thus, *ah shi* points are not fixed points or named acupuncture points but are points that produce pain, or a distended sensation when pressed. We further theorised that *ah shi* point acupuncture might modulate the immune system.

Though recent studies of *ah shi* points have focused on a simple muscular pain point, red, painful inflammatory sites such as acne or dermatitis can be also thought of as *ah shi* points. The Chinese dermatological classic *Orthodox Manual of*

Table 3 Changes in mean inflammatory lesion counts

Treatment sessions	Acupuncture group	Acupuncture + *ah shi* point group	p Value*	p Value†	p Value‡
0	17.5±5.9	17.5±10.5	0.9465	<0.0001	0.7755
3	13.8±4.9	15.2±9.6			
6	11.5±4.0	11.5±7.0			
9	11.0±4.9	10.8±4.0			
12	9.4±5.2	8.8±4.1			

*p Value is for a group effect with generalised estimating equation (GEE).

†p Value is for a treatment session effect with GEE.

‡p Value is for an interaction effect between frequency and group with GEE.

Table 4 Changes in Skindex-29 score between two groups

Treatment sessions	Acupuncture group	Acupuncture + *ah shi* point group	p Value*
0	64.8±14.6	47.2±16.8	0.556
12	53.1±15.4	39.1±11.6	
p Value†	0.001	0.021	

*p Value from analysis of covariance adjusting for baseline Skindex-29 score.

†p Value from paired t test.

Table 5 Changes in subjective symptom score

Treatment sessions	Acupuncture group	Acupuncture + *ah shi* point group	p Value*	p Value†	p Value‡
0	6.6±2.0	6.5±2.2	0.7598	<0.0001	0.3011
3	6.0±1.6	6.3±2.3			
6	5.2±1.9	5.3±2.5			
9	4.3±2.1	5.0±2.6			
12	4.2±2.4	4.2±2.2			

*p Value is for a group effect with generalised estimating equation (GEE).

†p Value is for a treatment session effect with GEE.

‡p Value is for an interaction effect between frequency and group with GEE.

Summary points

► Acupuncture needles were traditionally used to lance furuncles.
► We wanted to see if there would be an effect in acne vulgaris.
► We compared classical acupuncture alone with the same treatment plus needling of acne lesions (*ah shi* points).
► No additional effect was seen.

External Diseases (or *Wai Ke Zheng Zong*), states that 'acne is formed because Heat in the blood causes the blood to become stagnated.' Thus, an acne point is also a point where *Qi* and blood have stagnated and is curable by treatment at *ah shi* points.

This study is the first controlled trial that uses *ah shi* point acupuncture in the treatment of acne. The study has some limitations—namely, the short trial period and the lack of an untreated control group to better define the therapeutic effects of acupuncture.

In conclusion, acupuncture treatment of moderate acne vulgaris was associated with reduction of inflammatory lesions and improvement of the quality of life, but the use of *ah shi* points showed no further improvement.

Competing interests None.

Patient consent Obtained.

Ethics approval This study was conducted with the approval of the Institutional Review Board, KyungHee University, East-West Neo Medical Center.

Provenance and peer review Not commissioned; externally peer reviewed.

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