JOURNAL OF AGROMEDICINE AND MEDICAL SCIENCES (AMS) ISSN: 2460-9048 (Print), ISSN: 2714-5654 (Electronic)
Available online at http://jurnal.unej.ac.id/index.php/JAMS

Efektivitas Terapi Akupunktur Manual untuk Akne Vulgaris: Laporan Kasus

The Effectiveness of Manual Acupuncture Therapy for Acne Vulgaris: A Case Report

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Article Info

Article History:
Received: May 18, 2022
Accepted: October 30, 2022
Published: October 31, 2022

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How to cite this article:

Fredy, D.M., Nareswari,I., (2022). The Effectiveness of Manual Acupuncture Therapy for Acne Vulgaris: A Case Report. *Journal of Agromedicine and Medical Sciences*, 8(3): 140-145 https://doi.org/10.19184/ams.v8i3.31014

Abstrak

Akne vulgaris (AV) adalah peradangan kronis pada kelenjar pilosebasea. Presentasi klinis AV dapat digambarkan sebagai lesi inflamasi dan lesi non-inflamasi. Diagnosis AV melalui evaluasi klinis. AV dinilai berdasarkan keparahan klinis menggunakan kriteria Lehmann. Predileksi AV paling sering muncul di daerah wajah, dada dan punggung. AV menyebabkan beban terbesar pada dekade pertama dan ketiga kehidupan dan dapat menyebabkan kecemasan dan penurunan kepercayaan diri yang dapat memicu penurunan kualitas hidup. Akupunktur adalah suatu modalitas pengobatan nonfarmakologis yang dilakukan dengan menggunakan jarum filiformis pada titik akupunktur di tubuh. Seorang wanita 18 tahun didiagnosis dengan derajat AV sedang berdasarkan kriteria Lehmann. Pasien mendapatkan terapi akupunktur manual pada titik akupunktur dengan jarum diretensi selama 30 menit. Dilakukan terapi 2 kali seminggu selama 12 kali terapi. Setelah 12 kali terapi akupunktur, derajat AV berkurang dari kriteria sedang menjadi ringan dengan pengurangan total lesi sebanyak 81,25%. Tindak lanjut dilakukan penilaian setelah 1 bulan terapi, menunjukkan bahwa efek akupunktur masih bertahan. Mekanisme kerja akupunktur dapat bekerja secara langsung terhadap lesi akne dengan memperbaiki mikrosirkulasi, mengurangi proinflamasi meningkatkan antiinflamasi, serta meregulasi HPA aksis yang dapat menurunkan stress dan memperbaiki hormon. Akupunktur manual dapat dipertimbangkan sebagai modalitas terapi nonfarmakologis untuk mengobati pasien AV dengan efek samping minimal.

Kata kunci: *akne vulgaris; akupunktur; titik akupunktur tubuh; akupunktur manual.*

Abstract

Acne vulgaris (AV) is a chronic inflammation of pilosebaceous glands. The clinical presentation of AV can be described as an inflammatory lesion and non-inflammatory lesions. The diagnosis of AV is through clinical evaluations. AV was graded according to clinical severity using Lehmann's criteria. AV predilection most commonly appears on the face, chest, and back. AV causes the greatest burden between 10 to 30 years old and can cause anxiety and decrease self-confidence, instigating decreased quality of life. Acupuncture is a non-pharmacological treatment modality that is performed using filiform needles at acupuncture points. An 18-year-old woman was diagnosed with a moderate degree of AV based on Lehmann's criteria. She received manual acupuncture acupoints with the needles retained for 30 minutes. The treatment was conducted 2 times a week for a total of 12 treatments. After 12 treatments of acupuncture, the degree of AV was reduced from moderate to mild, with an 81.25% reduction in total lesions. Follow-up was carried out 1 month after the treatment, showing that the effect of acupuncture remained. The acupuncture mechanism works directly on acne lesions by improving microcirculation, reducing proinflammatory reactions, and increasing anti-inflammatory,

as well as regulating the HPA axis which can reduce stress and improve hormones. Manual acupuncture can be considered a non-pharmacological therapeutic modality to treat AV with minimal side effects.

***Keywords**: acne vulgaris; acupuncture; body acupuncture points; manual acupuncture.*

Introduction

Acne vulgaris (AV) is a chronic inflammation that causes pathological changes in pilosebaceous follicles. (Adhi, 2007),(Kou et al., 2020) acne affects an estimated 9.4% of the world's population and is the eighth most common disease in the world. Prevalence can increase in adolescents and adults, especially adult women. (Layton et al., 2021) In 2013, the Global Burden of Skin Disease study analyzed the prevalence and impact of skin disease in 188 countries and demonstrated that the burden from acne as measured by disability-adjusted life years (DALYs), years lived with disability, and years of life lost, is greatest in Western Europe, high-income North America and Southern Latin America and continues to cause the greatest global skin burden. AV causes the greatest burden between 10 to 30 years old.(Karimkhani et al., 2017) In another study reported by Collier of 1,013 participants aged 20 years and over, 73.3% reported having experienced acne. The reported prevalence of AV in women compared to men at the age 20 to 29 years, is 50.9% versus 42.5%. (Collier et al., 2008)

Multiple factors can cause AV, such as psychological stress, age, race, genetics, hormonal, working condition, weather, seasons, and food. (Adhi, 2007),(Mansu et al., 2018) Hormones have a role in the occurrence of acne, and the menstrual cycle can affect acne, participants were asked whether their acne worsened before, during, or after their menstrual period and also asked whether it was not related with menstruation period. The study was conducted on 400 people aged 12 to 52 years, 44% of those interviewed experienced recurrent acne occurring before menstruation, 42% not affecting menstruation, 10% affected it during menstruation, and 4% after menstruation. (Stolla et al., 2001)

There is a connection between food and the risk of AV. Consumption of high glycemic index, dairy products, spicy food, and fatty food every day increases the risk of AV,(Dikshit et al., 2017) food with a high glycemic index will be absorbed more quickly, thereby increasing glucose and increasing the signaling of glucose-insulin dependence. Increased insulin levels can produce androgen secretion and cause increased sebum production, sebaceous gland growth, and hyperkeratinization which play a role in AV pathogenesis. Milk can highly increase plasma Insulin-like Growth Factor 1 (IGF 1), therefore, increasing sebocyte proliferation, and resulting in the development and progression of acne lesions. (Mohiuddin, 2019)

John H. Stokes and Donald M. Pillsbury (1930) first proposed a theory of gastrointestinal mechanisms for overlapping skin diseases such as depression, anxiety, and acne. Emotional states can also alter normal gut microflora, increase intestinal permeability, and contribute to systemic inflammation. Constipation also occurs in 40% of acne patients, there is a connection between the gut-brain-skin connection in acne, and the theory has been validated. Intestinal permeability and endotoxin gain systemic access, causing increased pro-inflammatory substances and stress. Oxidative stress, substance P, and decreased insulin sensitivity cause endotoxemia. This cascade increases the occurrence of sebum production, exacerbation of acne, and additional psychological stress. (Bowe & Logan, 2011)

According to Traditional Chinese Medicine (TCM), Lung (LU) and Large intestine (LI) are associated with internal and external correlation. LU Qi/function such as opening and closing of the skin. Poor skin clearance causes by a lack of function in the LU and LI. Consuming excessive fatty foods, dairy products, and sugar makes the skin greasy and thick, and it is difficult to get rid of sebum secretions and sweat through the thickness, which can reduce the skin's function and cause damp-heat symptoms such as acne. Damp Heat moves downward to the LI, causing constipation.(Thambirajah, 2015) Therefore, improving constipation leads to improvement of acne lesions. (Bowe & Logan, 2011)

To measure the severity of the patient's acne, Lehmann's criteria was used, in which a patient's acne condition can be classified into 3 categories: mild, moderate, and severe based on the count of comedones, inflammatory lesions, and total lesions. If there are <20 comedones, <15 inflammatory lesions, or a total lesion count of <30 it falls into the mild acne category. If there are 20-100 comedones or 15-50 inflammatory lesions, or a total lesion count of 30-125 it falls into the moderate acne category. If there are >5 cysts, a total comedones count >100, a total inflammatory count >50, or a total lesion count >125 it will be considered severe acne. (Tanaka, 2018),(Lehmann et al., 2002)

The standard first-line treatment for mild AV such as topical combination therapy, an oral antibiotic, topical retinoid, and benzoyl peroxide, oral antibiotic plus topical retinoid, or benzoyl peroxide plus topical antibiotic, and severe AV such as oral antibiotic plus either topical combination therapy or oral isotretinoin. However, several side effects are associated with these topical and oral treatments such as dryness, irritation, allergic contact dermatitis, gastrointestinal problem, and antibiotic resistance. (Zaenglein, 2018),(Zaenglein, 2008)

Acupuncture is of non-pharmacological treatment modality that uses filiform needles at acupuncture points. (White, 2009) The development of acupuncture has occurred in various countries (White et al., 2008) including Western countries. The adapted and developed acupuncture is known as Western Medical Acupuncture (WMA) with the implementation of anatomy, physiology, and pathology knowledge. (White, 2009) Acupuncture has been used to treat a wide variety of ailments ranging from medical conditions to dermatological disorders.(Ma & Sivamani, 2015) The most common stimulation method is manual acupuncture. The duration of manual acupuncture varies from very short to 20 or 30 minutes. (Mansu et al., 2018)(White et al., 2008)

This case report studies manual acupuncture as an alternative treatment option that can be considered for treating AV with minimal side effects. This case report aims to use the most

common and effective evidence-based manual acupuncture points for AV summarized from various journals.

Case report

An 18-year-old woman had AV complaints in the face region for the past 3 years. The acne initially appeared on the left and right cheek area when the patient was 15 years old and had just started menarche. The acne never fully healed despite being given retinoic acid topical medication and the acne left marks on the cheeks and chin regions. Her acne often worsened several days before menstruation and when she experienced stress, then abated after menstruation. The patient had a regular menstruation cycle once a month. She usually consumed spicy food, fatty foods, fried foods, and dairy products on daily basis and rarely exercised. Defecation, every two/ three days, is irregular and has been felt for a long time, she does not remember when, and the patient sometimes delays the defecation, so it becomes hard.

The patient's body weight is 49 kg and height is 155.5 cm, and her BMI was 20.39 which is normal. On the skin examination approximately 60 comedones, 20 inflammatory lesions (such as 16 pustules, and 4 nodules), or a total lesion count of 80, the patient was identified with moderate acne in the face region by Lehmann's criteria.

The patient was also diagnosed with constipation based on the results of the Rome IV examination for functional constipation criteria. (Aziz et al., 2020) Her degree of constipation was diagnosed using Cleveland Constipation Scoring (CCS) which is an examination based on a questionnaire with scores ranging from 0 to 30; 0 indicates normal and 30 indicates severe constipation. (Agachan et al., 1996) Her pre-treatment CCS result was 13.

Intervention

The patient was treated with manual acupuncture until de qi sensation at bilateral points LU5 Chize, ST40 Fenglong, LI4 Hegu, ST25 Tianshu, TE6 Zhigou, SP10 Xuehai, ST36 Zusanli, LI11 Quchi, BL2 Cuanzhu, ST2 Sibai, ST6 Jiache, ST4 Dicang, SI18 Qianliao, ST7 Xiaguan with total 28 needles, at unilateral points EXHN3 Yintang and CV24 Chengjiang with total 2 needles and at the locations of the acne using 2-3 needles, encircling the acnes. The treatment was conducted twice a week for a total of 12 sessions using filiform needles (Huanqiu 0.25 x 25 mm on the body region; Huanqiu 0.20 x 13 mm on the face region) with 30-minute retention.

Measurements

Lehmann's criteria were carried out in every session and 1 month after therapy. Improvement criteria in AV (clinical response according to Wasitaatmadja's method modified from Witkowski and Simons, calculated by (total acne lesions before treatment minus total acne lesions after treatment) divided by total acne lesions before treatment times 100%. (Onie, 2005)

Results

The skin condition in the face at 2 sessions of acupuncture treatment, the patient in menstruation day 3, the skin condition approximately 50 comedones, 26 inflammatory lesions (such as 23 pustules, 3 nodules), or a total lesion count of 76, the patient was identified with a moderate grade.

The skin condition in the face at 4 sessions of acupuncture treatment, the skin condition approximately 40 comedones, 19 inflammatory lesions (such as 13 pustules, and 6 nodules), or a total lesion count of 59, the patient was identified with a moderate grade.

The skin condition in the face at 6 sessions of acupuncture treatment, the skin condition approximately 35 comedones, 8 inflammatory lesions (such as 8 pustules, no nodule), or a total lesion count of 43, the patient was identified with a moderate grade.

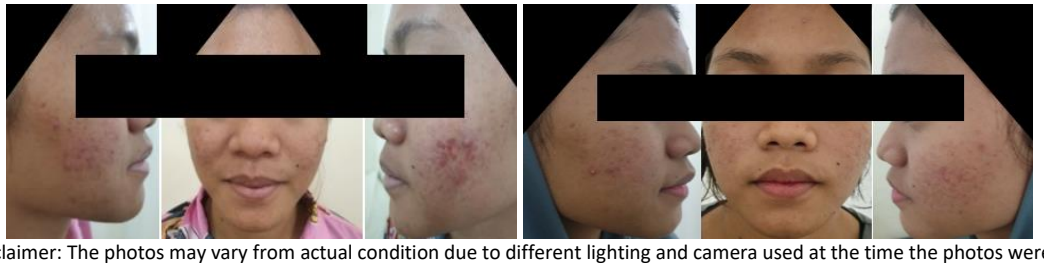
The skin condition in the face at 8 sessions of acupuncture treatment, the skin condition approximately 15 comedones, 20 inflammatory lesions (such as 13 pustules, and 7 nodules), or a total lesion count of 35, the patient was identified with a moderate grade.

The skin condition at 9 sessions of acupuncture treatment, the skin condition approximately 12 comedones, 4 inflammatory lesions (such as 4 pustules, and 0 nodules), or a total lesion count of 16, the patient was identified with a mild grade.

After 12 sessions of acupuncture treatment, the skin condition approximately 8 comedones, 7 inflammatory lesions (such as 6 pustules, and 1 nodule), or a total lesion count of 15, the patient was identified with a mild grade. The patient showed improvement in acne by an 81.25% reduction in total acne lesions number (Figure 1).

Lehmann's criteria also improved from moderate to mild grade which was already achieved in session 9. There was also improvement in constipation as the CSS reduced from a score of 13 to 4 after only 6 sessions. A follow-up was conducted 1 month after the treatment was completed and the patient's AV condition still maintains a mild grade using Lehmann's criteria. Acne flares that occurred during pre-menstrual were also reduced. No side effects occur during the treatment.

Figure 1. Before and after 12 sessions of acupuncture treatment



Disclaimer: The photos may vary from actual condition due to different lighting and camera used at the time the photos were taken.

Discussion

This case report describes the role of acupuncture in an 18-year-old woman with moderate AV, using TCM style acupuncture at body acupuncture. The author tries to summarize from various journals the most effective acupuncture points that are widely used in cases of AV.

The chosen acupoints in this study based on most research were LU5 Chize, LI4 Hegu, LI11 Quchi, and ST36 Zusanli is proven to reduce pro-inflammatory substances and increase anti-inflammatory as well as anti-infection functions, increase absorption of chronic inflammation, and thereby, stimulating the absorption of necrotic tissue, improving local microcirculation that causes skin lesions. (Kou et al., 2020) Treatment on LI4 Hegu, SP10 Xuehai, ST36 Zusanli, and SP6 Sanyinjiao reduces acne and inflammatory lesions, balances hormones, helps relaxation and improves the quality of life. (Zhu et al., 2017) Treatment on TE6 Zhigou, ST25 Tianshu regulates defecation, (An-he et al., 2003) reduces abdominal distension, promotes intestinal peristalsis, and stimulates contraction of gastrointestinal smooth muscles. (Wang & Yin, 2015) ST40 Fenglong can effectively regulate blood lipids, lower total cholesterol, triglycerides, LDL, and increase HDL. (Xie et al., 2009) EX-HN3 Yintang modulates areas in the central nervous system involved in stress and nociception such as the hypothalamus, nucleus accumbens, amygdala, hippocampus, and anterior cingulate gyrus.(Ma & Sivamani, 2015) Ahshi points/around the acne, BL2 Cuanzhu, LI20 Yingxiang, ST2 Sibai, ST4 Dicang, ST6 Jiache, ST7 Xiaguan, and CV24 Chengjiang increase local microcirculation that causes skin lesions. (Kou et al., 2020)

There is also a systematic study of acupuncture in dermatology, consisting of 23 studies of skin problems such as psoriasis, atopic dermatitis, itching, urticaria, idiopathic chronic pruritus, postoperative pruritus, uremic pruritus, seborrheic alopecia, hidradenitis suppurativa, chronic lichen simplex, warts, melasma, and acne. The acupuncture points were LI4 Hegu, LI11 Quchi, LU5 Chize, BL40 Weizhong, BL13 Feishu, BL12 Fengmen, ST36 Zusanli, SP6 Sanyinjiao, SP9 Yinlingquan, and the treatment was conducted for 30 sessions of 30 minutes each session with topical vitamin A as a control group once a day for 4 weeks, but there are no results yet, so no conclusions can be drawn. (Hwang & Lio, 2021)

Another systematic review and meta-analysis on 12 randomized controlled trials in patients with AV compared it with patients who received pharmacotherapy, no treatment, and sham or placebo. The chance of achieving a ≥ 30% and ≥50% change in lesions in the acupuncture group did not differ from that in the pharmacotherapy group. Interpretation of the results must be done with caution due to the quality of the studies, however, acupuncture may be considered an alternative option because it has minimal side effects. (Mansu et al., 2018)

A case report on a 24-year-old woman with AV using acupuncture points at GV20 Baihui, LI20 Yingxiang, PC6 Neiguan, LI4 Hegu, CV4 Guanyuan, CV12 Zhongwan, ST25 Tianshu, SP10 Xuehai, ST36 Zusanli, SP6 Sanyinjiao, LR2 Xingjian, BL25 Dachangshu, GV5 Xuanshu, GV6 Jizhong, GV7 Zhongshu, GV8 Jinsuo, GV11 Shendao, GV14 Dazhui, GB20 Fengchi and ahshi points on the face. After 10 treatments with a duration of 35-40 minutes once a week, the results obtained were better facial conditions with reduced inflammation and only acne scars remaining on her face. After 10 sessions, patients stopped receiving acupuncture for 2 weeks and only continued acupuncture therapy once a month as maintenance, totaling 19 treatments. At the last therapy session, her face was in very good condition and there was no more acne. (Zhu et al., 2017)

A systematic review, of a study on acne which consisted of 1 RCT and 2 observational studies (a total of 185 participants), the therapeutic effect of acupuncture in reducing acne lesions with the therapy ranging from 1 to 8 sessions, 3-5 times a day to 2-3 times a week, was investigated. There was no statistically significant difference found between the effects of acupuncture and herbal treatment from the result of 1 RCT, or no intervention. However, 2 observational studies reported a large reduction in acne lesions. (Ma & Sivamani, 2015)

A double-blind randomized controlled trial study on 36 patients with moderate AV by dividing them into 2 groups. Group 1 received therapy with 24 general acupuncture points while group 2 with ahshi points and 24 acupuncture points. In general, this treatment is done 12 times for 6 weeks. The acupuncture points consist of ST2 Sibai, ST6 Jiache, ST36 Zusanli, LI20 Yingxiang, LI4 Hegu, LI11 Quchi, PC6 Neiguan, HT8 Shaofu, SP3 Taibai, SP6 Sanyinjiao, SP10 Xuehai and LR3 Taichong in bilateral therapy with ahshi points in nodules and papules on the face. In conclusion, after 12 treatment sessions, acupuncture treatment for moderate AV was associated with reduced inflammatory lesions and improved quality of life compared to the baseline in both groups, but there was no significant difference between the 2 groups. (Son et al., 2010).

A randomized controlled trial on patients with mild to moderate papulopustular AV in 46 people, aged 15-35 years old who were divided into 2 groups. The treatment group received acupuncture on body points LI4 Hegu, LI11 Quichi, ST36 Zusanli, SP6 Sanyinjiao, GV14 Dazhui, BL13 Feishu, and BL20 Pishu as well as facial points on EX-HN3 Yintang, BL2 Cuanzhu, GB14 Yangbai, ST2 Sibai, EX-HN5 Taiyang, ST7 Xiaguan, SI18 Quanliao, ST6 Jiache, ST4 Dicang, EX-HN19 Jiachengjiang, and CV24 Chengjiang. The sham acupuncture group received a puncture 1 cm away from the acupuncture point and this was done 2 times a week for 10 times. It was found in the treatment group that there was a significant improvement in acne 95.65% compared to the sham acupuncture group 0%, $p<0.05$. Both groups were then evaluated for 2 weeks in which the treatment group still experienced clinical improvement as the number of lesions decreased from 8.52 ± 6.05 to 7.17 ± 5.81, $p=0.020$. Meanwhile, the sham acupuncture group did not improve; from 22.17 ± 8.67 to 22.74 ± 7.96, $p=0.102$. With a significance test of $p<0.05$, the acupuncture effect was still present after 2 weeks. (Onie, 2005)

Acupuncture at local and distal points both have several mechanisms such as reducing excessive sebum secretion and reducing inflammation and oiliness. Acupuncture can also reduce local tissue edema and other pathological changes, accelerate the elimination of inflammatory substances by

accelerating local blood circulation, and metabolism, and improve body condition. (Kou et al., 2020)

To prevent acne recurrence, clean the facial area regularly with a gentle cleanser; do not use scrubs because they can trigger the inflammation of acne; use moisturizer for dry/ irritated skin due to topical therapy; do not clean your face excessively; use non-comedogenic facial care and cosmetics; if used properly, extraction of blackheads in comedonal acne can provide benefits;(Wasitaatmadja, 2018) reduce fatty food, dairy products, spicy food and prevent constipation by eating fruits and drinking healthy drinks; maintain a positive mind, and get enough sleep. (Zhaohui, 2008) During the pandemic, it is better to keep the duration of wearing masks for no more than 4 hours/per day and change masks every day. (Techasatian et al., 2020)

Conclusion

There is AV reduction around the face. Even a month after the treatment, the effects of acupuncture still remained. The patient was generally satisfied with the results. Acupuncture provides satisfactory results in the treatment of acne with relatively safe side effects.

Conflict of Interest

No conflict of interest exists.

Acknowledgment

No funding has been involved.

Author contribution

All the authors meet the criteria of authorship.

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