Indonesian Journal of Acupuncture
ISSN 3025-8405

Article

# Effectiveness of Acupuncture Therapy Combination with Moringa Leaf Mask on the Degree of Acne Vulgaris Lesions in Students of the Acupuncture Department of Surakarta Health Ministry Polytechnic

*Hilyatul Ilmi Al Mufidah[1], Kurnia Eka Putri[2], Eka Deviany Widyawaty[3]*

*[1-3]Acupuncture Department, Health Polytechnic Ministry of Health Surakarta, Indonesia*

SUBMISSION TRACK

Received: August 11, 2024
Final Revision: September 15, 2024
Available Online: October 18, 2024

KEYWORDS

Acne Vulgaris, Acupuncture, Moringa Leaf Mask.

CORRESPONDENCE

Phone: 082141698976

E-mail: hilyatulilmi17@gmail.com

**ABSTRACT**

Acne Vulgaris is a disease condition that causes inflammation of the skin area in the form of blackheads, papules, pustules, and nodules. The prevalence of acne vulgaris in Indonesia is third ranks with more than 85% experienced by teenagers. The research method with Quasi-Experimental Pretest-Posttest two-group designs with a total sampling technique with 38 respondents. In this study was divided into two groups, group I acupuncture therapy with local facial points combined with moringa leaf masks and group II acupuncture therapy with local points LI 4 Hegu, LI 11 Quchi, ST 36 Zusanli combined with moringa leaf masks. The degree of acne vulgaris lesions was measured before and after 10 treatments.This research was conducted at the Acupuncture Department of Surakarta Health Ministry Polytechnic from February 5, 2024, to March 11, 2024. The results of the Wilcoxon test showed significant changes in the degree of acne vulgaris lesions in groups I and II with a value of <0.05 (0.000). While the Mann-Whitney test obtained a Sig value. (2-tailed) p= 0.00. With an average change value in group I of 26.71 and group II of 12.29, it is concluded that acupuncture therapy with local facial points combined with moringa leaf masks is more effective than acupuncture therapy at points LI 4 Hegu, LI 11 Quchi, ST 36 Zusanli combined with moringa leaf masks on the degree of acne vulgaris lesions. The conclusion, acupuncture therapy with local facial point combined with moringa leaf masks showed effective results in reducing the degree of acne vulgaris lesions.

## I. INTRODUCTION

Teenagers are an age group ranging from 10-21 years old where there is a phase growth and development proces(1). teenagers is a transition period from childhood to adulthood, both mentally and physically. Many physical changes caused by puberty are experienced by teenagers,

one of which is the appearance of acne vulgaris[2].

Acne vulgaris, often referred to as acne, is a condition that causes inflammation of the skin area that can be in the form of blackheads, papules, pustules, and nodules. It can be found on the face, neck, shoulders, chest, back, and upper arms[3]. Several factors influence acne vulgaris, including factors related to genetics, hormones, food, cosmetic use, and stress[4]. In addition, another cause is the onset of a bacterial infection that can be treated with antibiotics[5]. The world population of acne vulgaris cases is reported to reach 85% in the age range of 11-30 years[6].

Based on the Indonesian Cosmetic Dermatology Study Group PERDOSKI (2017) states that in Indonesia, acne vulgaris ranks third in the number of visitors to the Department of Skin and Gender Health Sciences in hospitals and skin clinics[7]. This disease is mostly experienced by Indonesian adolescents[8]. Data states, more than 85% of *teenagers* throughout Indonesia suffer from skin diseases such as acne vulgaris, which is found by women and men aged 16-19 years, with the dominant lesions being papules and blackheads[9]. The appearance of acne vulgaris in adolescents can have an impact on personal and psychological so that adolescents can experience depression, fear of socializing, discomfort and damage one's self-confidence[10]. Based on the results of preliminary studies conducted by researchers from August 2023 to November 2023 at the Acupuncture Department of the Surakarta Polytechnic of Health obtained as many as 60 students who experienced acne vulgaris.

According to the Chinese Guidelines for the Management of Acne Vulgaris in 2019 there are several types of treatment for acne vulgaris, these types of treatment are topical, systemic, physical, chemical, and Traditional Chinese Medicine. Traditional Chinese Medicine therapy for acne vulgaris usually includes a variety of treatment methods, one of which is acupuncture[11]. Acupuncture is an act of inserting or inserting needles into the body and manipulating certain points on the body due to a disturbance in the flow of Qi, causing an imbalance in the power of yin and yang energy[12].

In addition to acupuncture therapy treatment in cases of acne vulgaris, there are other treatments using herbal technique therapy, one of which uses Moringa leaf herbs. Moringa leaves contain several compounds including alkaloids, flavonoids, saponins, triterpenoids, and tannins that can inhibit the activity of bacteria that cause acne vulgaris[13]. Moringa leaves are also known to have many health benefits, including antioxidant content. In addition, moringa leaves can be used as a basic ingredient for making herbal medicines or beauty products, one of which is a face mask[14]).

Masks have various types whose production processes are chemical-based, and are made from organic ingredients that are easily available, one of which is a mask of moringa leaves Moringa leaf masks play a role in reducing the incidence of acne vulgaris due to clogged pores[15]. This statement is also supported by research conducted by Kurniawan in 2020 that the administration of moringa leaf mask extract is effective in restoring acne vulgaris in adolescents[16].

## II. METHODS

Based on the objectives of this research the research method titled "Effectiveness of Acupuncture Therapy Combination with Moringa Leaf Mask on the Degree of Acne Vulgaris Lesions in students of the Acupuncture Department of Surakarta Health Ministry Polytechnic " The research method with Quasi Experimental Pretest-Posttest two group designs. The population in this study was 60 subjects, the subjects were selected using Purposive Sampling as many as 38 respondents. In this study was divided into two groups, group I acupuncture

therapy with local facial points combined with moringa leaf masks and group II acupuncture therapy with local points LI 4 Hegu, LI 11 Quchi, ST 36 Zusanli combined with moringa leaf masks. The degree of acne vulgaris lesions was measured before and after 10 treatments. The independent variables are acupuncture therapy with local facial points combined with moringa leaf masks and acupuncture therapy at points LI 4 Hegu, LI 11 Quchi, ST 36 Zusanli combined with moringa leaf masks.

This research was conducted at the acupuncture department of the Surakarta Polytechnic. Title submission in August 2023 until the presentation of research results in May 2024. The operational definitions in this study include 1) Acupuncture therapy using acupuncture needles at local points of the face with a combination of moringa leaf masks for 10 treatments, 2) Acupuncture therapy using acupuncture needles at points LI 4 Hegu, LI 11 Quchi, ST 36 Zusanli with a combination of moringa leaf masks for 10 treatments, 3) The degree of acne vulgaris lesions, namely a. Calculate lesions manually by classifying acne according to the Consensus Conference on Acne Classification. Measurements are described by mild degree: blackheads <25, papules/ pustules <10, moderate degree: blackheads >25, papules/pustules 10 - 30, nodules >10, severe degree: papules/ pustules >30, nodules >10, Magnifying glass, Photographic technique (Samsung A53 5G), and Observation sheet

## III. RESULT

Based on Table 1 shows that the average age in group I is 18 years (52.6%), group II is 19 years (36.8%) and the most age is 18 years with a total of 10 subjects in group I, while in group II is 19 years old with a total of 7 subjects.

Based on Table 2. shows that gender in group I and II subjects is mostly experienced by women as many as 18 subjects (94.7%).

**Table 1. Frequency distribution of research subjects based on age**

| Age | Group I | | Group II | |
|---|---|---|---|---|
| | N | % | N | % |
| 18 | 10 | 52.6 | 5 | 26.3 |
| 19 | 5 | 26.3 | 7 | 36.8 |
| 20 | 3 | 15.8 | 2 | 10.5 |
| 21 | 1 | 5.3 | 5 | 26.3 |
| **Total** | **19** | **100** | **19** | **100** |
| Mean | | 18 | | 19 |

**Table 2. Frequency distribution of research subjects based on gender**

| Gender | Group I | | Group II | |
|---|---|---|---|---|
| | N | % | N | % |
| Women | 18 | 94.7 | 18 | 94.7 |
| Men | 1 | 5.3 | 1 | 5.3 |
| **Total** | **19** | **100** | **19** | **100** |

**Table 3. Frequency distribution of acne vulgaris lesion degree before and after action in Group I**

| Acne Degree | Group I | | | |
|---|---|---|---|---|
| | Before | | After | |
| | N | % | N | % |
| 1-10 | 2 | 10,6% | 15 | 78,9% |
| 11-30 | 13 | 68,7% | 4 | 21,2% |
| 31-40 | 4 | 21,2% | 0 | 0% |
| **Total** | **19** | **100%** | **19** | **100%** |
| Mean | 19,74 | | 6,26 | |

Based on Table 3. shows that the results of changes in moderate degrees from a percentage of 68.7% decreased to 21.2% while in mild degrees from a percentage of 10.6% increased by 78.9%. The average result of changes in the degree of acne lesions before therapy in group I was 19.74 with a decrease after therapy to 6.26.

Based on Table 4, shows that the results of changes in moderate degrees from a percentage of 84.3% decreased to 26.4% while in mild degrees from a percentage of 10.6% increased by 73.7%. The average result of changes in the degree of acne vulgaris lesions before

therapy in group II was 16.11 with a decrease after therapy to 9.26.

**Table 4. Frequency distribution of acne vulgaris lesion degree before and after action in Group II**

| Acne Degree | Group II | | | |
|---|---|---|---|---|
| | Before | | After | |
| | N | % | N | % |
| 1-10 | 2 | 10.6 | 14 | 73.7 |
| 11-30 | 16 | 84.3 | 5 | 26.4 |
| 31-40 | 1 | 5.3 | 0 | 0 |
| **Total** | **19** | **100** | **19** | **100** |
| Mean | 16.11 | | 9.26 | |

Based on Table 5. shows that the study subjects in groups I and II had the most toxic heat accumulation syndrome, with 10 subjects (52.6%) in group I and 11 subjects (57.9) in group II.

**Table 5. Frequency distribution of research subjects based on syndrome differentiation**

| Diferensiasi Sindrom | Group I | | Group II | |
|---|---|---|---|---|
| | N | % | N | % |
| **Toxic Heat Accumulation** | 10 | 52.6 | 11 | 57.9 |
| **Hot damp accumulation in the colon and stomach** | 6 | 31.6 | 7 | 36.8 |
| **Hot Wind in Lung Meridian** | 3 | 15.8 | 1 | 5.3 |
| **Total** | **19** | **100** | **19** | **100** |

The normality test on the data in this study that has been obtained in this study was tested using the Shapiro Wilk Test because the number of research subjects <50 subjects, namely 38 research subjects. Data normality test in group I Sig value before therapy 0.036 and Sig after therapy 0.331 while group II before therapy 0.025 and Sig after therapy 0.653. Based on these data, it can be interpreted that the Pre-Test and Post-Test are not normally distributed (p = <0.05), so the Homogeneity test is carried out using the Levene Statistic Test.

The results of the homogeneity test in this study using the Levene Statistic test with the results obtained Sig. (p = 0,037). This shows that the p-value = <0.05. With that it can be concluded that the variance of the data is not homogeneous, so then use the Mann-Whitney test.

**Table 6. Wilcoxon Test**

| Paired Data | N | p |
|---|---|---|
| Group I | 19 | 0.000 |
| Group II | 19 | 0.000 |

Based on Table 6, the results obtained in group I and group II with a value of <0.05 (0.000), so there are significant changes in the results of changes in the degree of acne vulgaris lesions in both group I and group II.

**Table 7. Mann Whitney Test**

| Group | N | *Mean Rank* | p |
|---|---|---|---|
| Group I | 19 | 26.71 | 000 |
| Group II | 19 | 12.29 | |

Based on Table 9. that the Mann-Whitney test results from p-value= 0.000. This shows that the p value<0.05. With an average value in group I of 26.71 and group II of 12.29, it is concluded that acupuncture therapy of local facial points combined with moringa leaf masks is more effective than acupuncture therapy of LI 4 Hegu, LI 11 Quchi, ST 36 Zusanli combined with moringa leaf masks on the degree of acne vulgaris lesions.

## IV. DISCUSSION

Data Acupuncture therapy of local facial points combined with moringa masks is more effective than acupuncture therapy of LI 4 Hegu, LI 11 Quchi, ST 36 Zusanli combined with moringa masks on reducing the degree of acne vulgaris lesions in students of the Acupuncture Department of the Surakarta Health Ministry Polytechnic.

The average change in group I was 26.71 and group II was 12.29, so it was concluded that acupuncture therapy at local points of the face combined with moringa leaf masks was more effective than acupuncture therapy at points LI 4 Hegu, LI 11 Quchi, ST 36 Zusanli combined with moringa leaf masks on the degree of acne vulgaris lesions. Acupuncture has anti-inflammatory effects and can eliminate acne vulgaris due to beta-endorphin stimulation, acupuncture treats inflammation and treats acne vulgaris cytokines and calcitonin gene-related peptide (CGRP). Acupuncture needling can cause relaxation of the skin which can reduce acne vulgaris inflammation[17].

The role of local point acupuncture therapy is a common point found on the face and serves to treat local facial abnormalities (symptomatic) to improve the condition of acne vulgaris[18].Stabbing the local area causes a maximum reaction and increases the flow and circulation of local blood circulation which will cause improvement in the case of acne[19]. Facial local point acupuncture therapy can reduce inflammation in acne vulgaris lesions which causes a vasodilating effect, so that the migration of leukocyte cells to the local area of acne can accelerate the healing of skin infections. The effect caused by the stabbing of local facial points in addition to the Vasodilation reaction is endogenous peripheral Opioids (OEP) anti-inflammatory and Growth Promoting Factor (GPF) as a healing factor. Stabbing at acupuncture hormonal points can balance the hormonal system of the human body by stimulating the hypothalamus to stimulate the pituitary gland[20].

Based on the results of the research conducted, it show that there is a lot of decrease in the degree of acne vulgaris lesions in group I acupuncture therapy of local facial points combined with moringa leaf masks. This is in previous studies show that when acupuncture points are stabbed, it can reduce inflamematory lesions, balance hormones, cleanse toxins in the body, and help to calm the mind. This is supported by research conducted by Zhu et.al (2017), the results of this study are the effect of acupuncture therapy on local facial points with an intervention of 10 times therapy[21].

In addition, the benefits of moringa face masks are combined in this study and have a fairly good effect on reducing the degree of acne vulgaris lesions. Moringa leaves can be utilized in making organic masks to treat facial skin. Moringa leaves contain antioxidants, such as flavonoids, saponins, terpenoids, steroids, tannins and alkaloids. Moringa leaf masks are great for facial treatments because moringa leaves have a very high vitamin content compared to other plants and do not provide side effects so they are safe to use[22]. Moringa leaf masks provide benefits in reducing acne vulgaris[23]. Moringa leaf extract also has antibacterial properties against staphylococcus aureus, staphylococcus epidermidis, and propionibacterium that cause acne vulgaris[24].

## V. CONCLUSION

The research subjects who experienced acne vulgaris totaled 38 subjects. The characteristics of the subjects were in the age range of 18-22 years, with the number of female research subjects more than male, while the syndrome most experienced by the subjects of this study was toxic heat accumulation syndrome.

The results of the Wilcoxon test showed a significant value of p = 0.000 if p <0.5 then ha is accepted and ho is rejected, which means that there is a significant change in the results of changes in the degree of acne vulgaris lesions in both group I and group II. 5.From the statistical results using the Mann Whitney test, the Asymp. Sig. (2-tailed) value of p = 0.000 where p < 0.05) then the results of the analysis test Ha is accepted and Ho is rejected so it is concluded that acupuncture therapy at local points of the face combined with moringa masks is more effective than

acupuncture therapy at points LI 4 Hegu, LI 11 Quchi, ST 36 Zusanli combined with moringa masks on reducing the degree of acne vulgaris lesions in students of the Acupuncture Department of the Surakarta Ministry of Health Polytechnic.

## REFERENCES


1. Amita Diananda. Psikologi Remaja Dan Permasalahannya. Journal Stit-Islamic. 2019;1(1):116–33. Jurnal Stit-islamic.https://dx.doi.org/10.33853/istighna.v1i1.20
2. Erlicha Paramitha. Hubungan Penggunaan Kosmetik Terhadap Kejadian *Acne Vulgaris*. Jurnal Medika hutama. 2020;02:304–7.
3. Suri Afnanita, Dr. Surya Nola. Faktor- Faktor yang Mempengaruhi Timbulnya Acne Vulgaris Pada Remaja Remaja Santri Pesantren Babun. Jurnal Kesehatan. 2023;4(September):3144–51. https://doi.org/10.31004/jkt.v4i3.17274
4. Maler T, Portuna K, Nasution M. Hubungan Antara Indeks Massa Tubuh Terhadap Kejadian Acne Vulgaris Pada Mahasiswa Kedokteran Universitas Prima Indonesia. Jurnal Pendidikan dan Konseling. 2022;4(6):1553–68. https://doi.org/10.31004-/jpdk.v4i6.8416
5. Sagung I, Putu S. Potensi Anti jerawat Ekstrak Daun Paku Sarang Burung (Asplenium Nidus L) dalam Formulasi Nanoemulgel. Jurnal Farmasi. 2023;1:507–18. https://doi.org/10.24843/wsnf.2022.v01.i01 .p40
6. Lestari R, *et al*. Perilaku Mahasiswa Terkait Cara Mengatasi Jerawat. Jurnal Farmasi Komunitas.2020;8(1):15. https://doi.org/10. 20473/jfk.v8i1.21922
7. Yusuf V, Nurbaiti N. Hubungan Antara Tingkat Pengetahuan Pelajar Sekolah Menengah Atas Tentang Acne Vulgaris Pada Wajah Dengan Perilaku Pengobatannya. Jurnal Kedokteran Kesehatan. 2020;6(2):2017–20.
8. Ritmawati I, Sawitri A. Hubungan Stres Dengan Kejadian Acne Vulgaris Pada Siswa Kelas III Di Sman 1 Gianyar. Jurnal Medika Udayana. 2019;8(10):4–8.
9. Rinda Fithriyana. Hubungan Kejadian Acne Vulgaris Dengan Kepercayaan Diri Pada Siswi Kelas Xi Di Sman 2 Bangkinang Kota. Jurnal Ners. 2019;3(1):7–12. https://doi.org/10.31004/jn.v3i1.394
10. Aryani D, Riyaningrum. Hubungan Acne Vulgaris Dengan Kepercayaan Diri Pada Mahasiswa Universitas Purwokerto Angkatan 2021. Jurnal Kesehatan Tambusai. 2022;3(3):2774–0524. https://doi.org/10.31004/jkt.v3i3.6595
11. Hendra T , I Wayan. Current Management Of Acne Vulgaris. Jurnal kedokteran. 2019;3(9):313–20. https://doi.org/10.23960/j kunila32313-320
12. I Dewa Ayu. Tingkat Kepuasan Pasien Terhadap Pelayanan Terapi Akupunktur Di Klinik Sudirman Medical Center (Smc) Denpasar. Jurnal Riset Kesehatan Nasional. 2022;6(1):7–11. https://doi.org/10.37294
13. Isyraqi N, Rahmawati D, Sastyarina Y. Skrining Fitokimia Dan Aktivitas Farmakologi Tanaman Kelor (Moringa Oleifera Lam). Jurnal farmasi. 2020;12:202–10.
14. Kurniawan,et al. Pengolahan Daun Kelor Di Desa Sigar Penjalin Kecamatan Tanjung Kabupaten Lombok Utara. Jurnal Abdi Mas TPB Unram. 2020;2(2). https://dx.-doi.org/10.29303/amtpb.v2i2.47
15. Santi S, Yani L. Aktivitas Antibakteri Ekstrak Daun Kelor (Moringa Oleifera Lam) Terhadap Bakteri Penyebab Jerawat. Jurnal Farmasi. 2021; http://dx.doi.org/1-0.29313/.v0i0.28814
16. Munshin I, Dwi P. Pengaruh Pemberian Ekstrak Masker Daun Kelor (Moringa Oleifera) Terhadap Pemulihan Jerawat Pada Remaja. Stikes Insa Cendekia Med Jombang. 2020;3–6.
17. Kiron N, Hoque T. A Case Report Of Acne Vulgaris Treated By Combination Of

Acupuncture. Jurnal of Clinical dan Dermatology. 2018;09(03):9–10. http://dx.-doi.org/10.4172/2155-9554. 1000446
18. Sanjaya. Modul Terpadu Acne Vulgaris. surakarta: Program Studi DIV Akupunktur, Jurusan Akupunktur, Politeknik Kesehatan Surakarta; 2013
19. Mansu S, Liang H, et al. Acupuncture For Acne Vulgaris: A Systematic Review And Meta-Analysis. Jurnal Evidence-based Complement Altern Med. 2018;12. http://dx-.doi.org/10.1155/2018/4 806734
20. Byeong-Kook Son, Younghee Yun I-HC. Efficacy of ah shi point acupuncture on acne vulgaris. Acupunct Med. 2018;28(3):126–9.
21. Jihe Zhu, Blagica Ar. Acupuncture Treatment For Acne Vulgaris. Jurnal Interdiscip. 2018;3(8):733–50.
22. Madikizella dan Firsty. Kelayakan Masker Tradisional Daun Kelor Untuk Perawatan Kulit Wajah Kering. Jurnal Tata Rias dan Kecantikan. 2022;2(3):110. https://doi.-org/10.24036/.v2i3.47
23. Marwiyah M. Masker Daun Kelor, Daun Salam, Dan Tepung Garut Untuk Mengurangi Jerawat Pada Wajah. Jurnal Teknologi Busana dan Boga. 2019;7(1):39–45. https://doi.org/10.15294/teknobuga.v7i1.
24. Andika Putra, Desi I. Uji Aktivitas Antibakteri Ekstrak Daun Kelor (Moringa Oleifera) Terhadap Pertumbuhan Bakteri Penyebab Jerawat. Jurnal Kedokteran. 2022; 11(3):50–62.
25.