



Article

Effectiveness of Acupuncture Therapy ST36 Zusanli ST40 Fenglong GV20 Baihui with a Combination of Cupping GV14 Dazhui in Patients with Hypertension in Simpang Luas Village, Sungai Are District, Ogan Komering Regency, South Ulu

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SUBMISSION TRACK

Received: July 7, 2025
Final Revision: October 12, 2025
Available Online: October 18, 2025

KEYWORDS

Hypertension, Acupuncture, Acupuncture Sham, Cupping

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ABSTRACT

Hypertension is one of the most significant health problems in the world. This condition is characterized by increased systolic and diastolic blood pressure that can lead to serious complications such as heart disease, stroke, and kidney failure. Treatment of hypertension generally uses anti-hypertensive drugs, but long-term use may cause side effects. This research is a quantitative research with a Quasi-Experimental design. The research subjects amounted to 40 people who were divided into two groups. Group I acupuncture therapy and group II acupuncture and cupping therapy. The results of data analysis using the Mann-Whitney test obtained a p-value of 0.004. This shows that the $p < 0.05$ value means that cupping combination acupuncture therapy is effective in lowering blood pressure in hypertensive patients in Simpang Luas Village, Sungai Are District, Ogan Komering Regency, South Ulu.

I. INTRODUCTION

Hypertension is one of the most significant health problems in the world. This condition is characterized by increased systolic and diastolic blood pressure that can lead to serious complications such as heart disease, stroke, and kidney failure⁽¹⁾. Treatment of hypertension generally uses anti-hypertensive drugs, but long-term use may cause side effects⁽²⁾. WHO data shows that about 1.28 billion adults aged 30–79 years have hypertension, and two-thirds of them live in low- and middle-income countries. Worldwide, hypertension is the leading cause of premature death, contributing to

many cases of heart disease, stroke, and kidney failure. More than 46% of people with hypertension are unable to control their blood pressure properly, while only 42% have been diagnosed and received appropriate treatment. This shows that there is a large gap in hypertension management at the global level⁽³⁾.

The prevalence of hypertension in 2021 was recorded at 34.1%, with most sufferers not routinely taking prescribed medications. Based on data from the Ministry of Health of the Republic of Indonesia, it is estimated that there are around 63 million people with hypertension in Indonesia, with the death rate

due to hypertension reaching 427,218 cases.⁽⁴⁾ The prevalence of hypertension is higher in the adult age group, especially in the age range of 45-54 years (45.3%) and 55-64 years (55.2%). In the past 3 years, it has been seen that there are still people with hypertension in the South Sumatra Province area in 2020, totaling 645,104 patients; in 2021, there was an increase to 987,295 patients; while in 2022, it increased again to 1,497,736 hypertension patients. Of these, around 74.9% of patients have received medical services, although this figure still shows a lack of optimal hypertension management⁽⁵⁾. The prevalence of hypertension in the population aged >18 years according to the district in South Sumatra, Ogan Ilir Regency, is 6.96%. Hypertension patients based on age characteristics of 55-64 years are 19.72%, and 65-74 years old are 20.82%⁽⁵⁾. Based on a preliminary study conducted in Simpang Luas Village, Sungai Are District, Ogan Komering Ulu Selatan Regency, there were 69 cases of hypertension in January-September 2024.

Based on this statement, this study aims to evaluate the effectiveness of acupuncture at certain points ST36, Zusanli ST40, Fenglong GV20, Baihui with the combination of Cupping GV14 Dazhui, in lowering blood pressure in hypertensive patients in Simpang Luas Village, Suangai Are District, Ogan Komering Ulu Selatan Regency. The acupuncture points selected based on previous research have a relationship with the regulation of blood pressure and the cardiovascular system. This study will provide further insight into the potential of acupuncture and cupping therapy as a safe and effective alternative or adjunct therapy for the management of hypertension.

II. METHODS

In the study with the title "Effectiveness of Acupuncture Therapy ST36 Zusanli ST40 Fenglong GV20 Baihui with

a Combination of Cupping GV14 Dazhui in Hypertensive Patients in Simpang Luas Village, Sungai Are District, Ogan Komering Regency, South Ulu" was carried out from October 2024 – March 2025. Nitiannini's research uses a quantitative method with a design Experimental quasi-experimental design and two groups, a pretest-posttest design. The research subjects were divided into two groups, namely group 1 was given acupuncture treatment, and group 2 received acupuncture and cupping treatment. The acupuncture points used in this study are ST36 Zusanli, ST40 Fenglong GV20 Baihui Points With the Combination of Cupping GV14 Dazhui.

The statistical test data in this study were processed using the normality test, Shapiro Wilk and hypothesis tests using Wilcoxon and Mann Whitney050 was considered statistically significant.

III. RESULT

This research began by conducting a preliminary study in October 2024 with the aim of finding out the number of research subjects who experienced obesity. Based on the results of the preliminary study, 40 research subjects were obtained who met the inclusion criteria and received therapy 10 times.

Table 1. Characteristics of Respondents

Characteristic	N	%
Age (Years)		
34-40	12	30.0
41-50	15	37.5
51-60	13	32.5
Gender		
Woman	34	85.0
Man	6	15.0
Work		
Farmer	15	37.5
PNS	5	12.5
Private Employees	8	20.0
Teacher	4	10.0
IRT	8	20.0

Table 1 shows that the most age-based research subjects with hypertension were 41-50 years old, which was 15 people (37.5%). Based on gender, the most experienced by women as many as 34 people (85%), and based on the most jobs, namely farmers, as many as 15 people (37.5%).

Table 2. Characteristics of Research Subjects Based on Complaint Before Intervention

Characteristic	N	%
Before Group 1 Therapy Acupuncture		
Dizziness or headache	5	25
Anxious	-	0
Pain in the nape of neck	9	45
Quick to Anger	2	10
Ringing Ears	-	0
Insomnia	-	0
Shortness of Breath	2	10
Feeling Tired Easily	2	10
Glowing Eyes	-	0
Before Group 2 Therapy, Acupuncture and Cupping GV14		
Dizziness or headache	5	25
Anxious	-	0
Pain in the nape of neck	7	35
Quick to Anger	2	10
Ringing Ears	-	0
Insomnia	2	10
Shortness of Breath	2	10
Feeling Tired Easily	2	10
Glowing Eyes	-	0

Table 2 shows that the research subjects based on accompanying complaints before therapy group 1 Acupuncture, had the most complaints of pain in the neck of the neck as many as 9 people, and group 2 of acupuncture and cupping GV14 had the most pain in the neck, as many as 7 people.

Table 3 shows that the research subjects based on accompanying complaints after therapy group 1 Acupuncture were most present in 4 complaints of pain in the nape of the neck, and group 2 Acupuncture and cupping GV14 had the most pain in the nape of the neck as many with 3 people.

Table 3. Characteristics of Research Subjects Based on Complaint After Intervention

Characteristic	N	%
After Group 1 Therapy Acupuncture		
Dizziness or headache	-	0
Anxious	-	0
Pain in the nape of the neck	4	40
Quick to Anger	2	20
Ringing Ears	-	0
Insomnia	-	0
Shortness of Breath	2	20
Feeling Tired Easily	2	20
Glowing Eyes	-	0
After Group 2 Therapy Acupuncture and Cupping GV14		
Dizziness or headache	-	0
Anxious	-	0
Pain in the nape of the neck	3	37.5
Quick to Anger	2	25
Ringing Ears	-	0
Insomnia	1	12.5
Shortness of Breath	2	25
Feeling Tired Easily	1	12.5
Glowing Eyes	-	0

Table 4. Research Subjects Based on Syndrome

Characteristic	N	%
Acupuncture Group		
The Burning Heart	5	25
Hyperactivity of the liver	4	20
Yin Deficiency of the Liver and Kidneys	9	45
Stagnation of Phlem	2	10
Dampness in the Middle		
Dazhui GV14 Acupuncture and Cupping Group		
The Burning Heart	3	15
Hyperactivity of the liver	5	25
Yin Deficiency of the Liver and Kidneys	10	50
Stagnation of Phlem	2	10
Dampness in the Middle		

Based on Table 4. Characteristics of the research subjects based on group 1 syndrome Acupuncture were most found in Yin Liver and Kidney Deficiency syndrome as many as 9 people, while in group 2 Acupuncture and Cupping, GV14 Dazhui had the most in Yin Deficiency of Liver and Kidney, as many as 10 people.

Table 5. The Result of the Wilcoxon Test

Group	N	p
Systolic Group I	20	<0.001
Systolic Group II	20	
Diastolic Group I	20	<0.001
Diastolic Group II	20	

Table 5 shows that both groups experienced a significant decrease in systolic and diastolic blood pressure after treatment ($p < 0.001$), indicating that the interventions were effective in reducing blood pressure.

Table 6. The Results of the Mann-Whitney Test

Group	Z	p
Systolic Group I	-4.411	<0.001
Systolic Group II	-3.411	<0.001
Diastolic Group I	-4.309	0.004
Diastolic Group II	-4.309	0.004

Table 6 shows that both groups experienced a statistically significant decrease in systolic and diastolic blood pressure after treatment ($p < 0.050$). This indicates that the interventions given in both groups were effective in lowering blood pressure.

IV. DISCUSSION

Manipulation of the acupuncture the results of this study are interpreted based on theories related to previous research. The purpose of this study is to determine the Effectiveness of Acupuncture Therapy ST36 Zusanli ST40 Fenglong GV20 Baihui with a combination of Cupping GV14 Dazhui in Hypertensive Patients in

Simpang Luas Village, Sungai Are District, Ogan Komering Ulu South Regency. Based on the results of this study, it was found that Zusanli ST36, Zusanli ST40, Fenglong GV20 Baihui Acupuncture Therapy, with a combination of Cupping GV14 Dazhui, was effective in lowering blood pressure in Hypertensive Patients in Simpang Luas Village, Sungai Are District, Ogan Komering Regency, South Ulu.

This study is in line with that conducted by Sumalara, showing that acupuncture therapy performed at ST36 Zusanli, LI11 Cice, and GB20 Fengchi points resulted in an average change in systolic blood pressure of 7.8, and an average diastolic pressure of 6.93. (51) This study is also in line with that conducted by Christiyawati and Purwanto, showing that acupuncture therapy at GV20 Baihui, GB20 Fengchi, LV3 Taichong, EX-HN3 Taiyang showed an average systolic blood pressure change of 19, and an average diastolic of 10 mmHg⁽⁶⁾.

The second research was conducted by Suwarini's research showed that acupuncture therapy at the points KI3 Taixi, SP6 Sanyinjiao, LI4 Hegu, and PC6 Nei Guan had changes in blood pressure after acupuncture therapy, where the average blood pressure before therapy was 152.35/97.65 mmHg and decreased to 140.74/90.59 mmHg after acupuncture therapy⁽⁷⁾. Acupuncture therapy causes the release of endorphin hormones through nerve stimuli on the surface of the skin, which then transmit those stimuli to the spinal cord, mesencephalon, and pituitary complex of the hypothalamus⁽⁷⁾. Increased levels of endorphins will lead to increased synthesis of the hormone dopamine, which increases the activity of the parasympathetic nervous system. (55)

The mechanism of lowering blood pressure with cupping therapy is through the cupping technique and vacuum cups as well as puncturing in the cupping area which stimulates the release of inflamma-

tory mediators, namely serotonin, histamine, bradykinin, and slow reacting substances (SRS), which will stimulate the release of endothelium derived relaxing factor (EDRF) or nitric oxide (NO) and aldosterone. The substance has the effect of dilating capillaries and reducing blood volume, resulting in a decrease in peripheral resistance, which ultimately lowers blood pressure⁽⁸⁾.

In addition, cupping therapy can also calm the sympathetic nervous system, where, when the activity of this nervous system decreases, it will cause blood pressure to decrease. In wet cupping therapy performed by puncture, subcutaneous blood flow at the puncture site will increase, which is also followed by increased nitric oxide production in areas with high blood circulation. Nitric oxide also plays a role in vasodilation, as well as increasing the supply of nutrients and blood used by the cells and layers of blood vessels, namely arteries and veins, so that blood vessels become stronger and more elastic. Cholesterol can also be expelled along with the discharge of blood during wet cupping, which has an impact on blood viscosity, so that it will affect blood pressure⁽⁹⁾.

Based on the description above, it can be concluded that the administration of therapy to hypertensive patients, both acupuncture therapy and acupuncture therapy with a combination of cupping, can actually reduce systolic and diastolic blood pressure. By performing acupuncture, the

body becomes relaxed, calm, and comfortable, which is then followed by a combination of cupping, which provides a vasodilating effect so that blood pressure decreases stably⁽¹⁰⁾.

V. CONCLUSION

Based on the explanation above, the data were analyzed using SPSS Statistics 27. It was found that acupuncture combination therapy, Point ST36 Zusanli, ST40 Fenglong GV20 Baihui, with Cupping Combination GV14 Dazhui, was effective in lowering blood pressure in Hypertensive Patients in Simpang Luas Village, Sungai Are District, Ogan Komering Regency, South Ulu. Based on the results of the Wilcoxon test on blood pressure reduction (posttest) therapy in both groups, a significance value of 0.000 was obtained, which means $p < 0.050$. In addition, in the Mann-Whitney test on the decrease in systolic and diastolic blood pressure before therapy, a significance value of 0.000 was obtained, and after the therapy was carried out, a significance value of systolic and diastolic blood pressure of 0.004 was obtained, which means $p < 0.050$, so that H_a was accepted and H_0 was rejected. This shows that Zusanli ST36 Fenglong GV20 Baihui Point Acupuncture therapy with a combination of GV14 Dazhui Cupping is effective in lowering blood pressure in hypertensive patients in Simpang Luas Village.

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