Article

The Effectiveness of Acupuncture Therapy and Warm Compresses Combination on Gastritis Pain Scale in Female Students at SMAIT Ibnu Abbas Klaten

Isna Nur Amin[1], Nurtama Aditya Nugraha[2], Chusnul Zulaika[3]

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

ABSTRACT

Gastritis easily attacks teenagers because of the high academic and is characterized by stomach pain, nausea, and vomiting. Complementary therapies that can be used for gastritis are acupuncture and warm compresses. Acupuncture stimulates the autonomic nerves to inhibit sympathetic stimulation so that vasodilation occurs. Warm compresses can relax muscles, so they can reduce gastritis pain. Research purposes to determine the effectiveness of acupuncture therapy and a combination of warm compresses on the gastritis pain scale in female students at SMAIT Ibnu Abbas Klaten. This research used Quasi Experiment Design with the two groups pretest-posttest design method and Purposive Sampling technique, with a total sample of 34 research subject. The points used are ST 36, PC 6, CV 12, and SP 6, and the warm compress using a water bag at a temperature of 37-40°C for 15 minutes. Research was conducted at SMAIT Ibnu Abbas Klaten in February–March 2024. The Paired T-test for both groups has p<0.001. Acupuncture therapy and warm compresses are more effective because they have a mean value of 3.294, while the mean value of the acupuncture therapy group is 2.941. Acupuncture therapy and warm compresses combination are effective in reducing the gastritis pain scale.

I. INTRODUCTION

Gastritis generally affects people of productive age because too much activity, unhealthy and irregular diet, high academic workload, and the burden of life that they have can affect stress levels This situation can affect daily activities so that it has an unfavorable impact on sufferers such as being lethargic, decreasing quality of life, and becoming unproductive[1].

Based on the World Health Organization (WHO) gastritis disease in the world is around 1.8-2.1 million of the total population each year. Indonesia is ranked 3rd with gastritis cases, namely the percentage incidence rate of 40.8. In Central Java, the incidence of gastritis is 79.6%[2]. Based on the results of a preliminary study conducted by researchers in October 2023 in female students at SMAIT Ibnu

Abbas Klaten 52 female students had a history of gastritis.

Nonpharmacological therapies such as warm compresses, relaxation therapy with deep breathing, herbal therapy, and acupuncture therapy. Acupuncture is proven to improve the functional of the stomach and spleen which can strengthen the gastric mucosal barrier. Acupuncture therapy aims to suppress excessive gastric acid production and can reduce pain and inflammation[3].

In addition to acupuncture therapy, namely using warm compresses to increase muscle relaxation reduce pain due to spasms or stiffness, and provide a sense of local warmth[4]. Warm compresses can release the body's endorphins to inhibit the transmission of pain stimuli[5]. Gastritis if not treated quickly can cause bleeding so that a lot of blood comes out and gathers in the stomach, it can also cause stomach ulcers or stomach cancer which can cause death[6].

This study aimed to determine the effectiveness of acupuncture therapy and a combination of warm compresses on the gastritis pain scale in female students at SMAIT Ibnu Abbas Klaten.

II. METHODS

This research is a quantitative study with a Quasi Experiment Design two groups pretest-posttest design. The population obtained data results as many as 52 female students who experienced gastritis. 2 treatment groups, each group totaling 17 respondents. The learning was divided into two groups, group 1 acupuncture therapy and warm compress, and group 2 acupuncture therapy. The gastritis pain scale was measured before and after 10 times of therapy. The points used were ST 36 Zusanli, PC 6 Neiguan, CV 12 Zhongwan, SP 6 Sanyinjiao.

This research was conducted at SMAIT Ibnu Abbas Klaten. title submission in August 2023 until the presentation of research results in May 2024.

Acupuncture therapy is a therapy by sticking acupuncture needles at ST 36 Zusanli, PC 6 Neiguan, CV 12 Zhongwan, SP 6 Sanyinjiao for 10 times therapy. Give warm compresses with buli-buli containing warm water with a temperature of 47.5 ° C for 15 minutes with 10 times therapy. Gastritis pain scale using NRS (Numeric Pain Rating Scale).

III. RESULT

This research began with a preliminary study in October 2023 to determine the amount of research subjects experiencing gastritis at SMAIT Ibnu Abbas Klaten. Preliminary study results 52 subjects were obtained selected using Purposive Sampling as many 34 respondents. In the learning is divided into two groups. Acupuncture therapy and warm compresses are done 2 times a week for 10 times therapy.

Table 1. Distribution of research subjects by age

Age	Group I		Group II	
	N	%	N	%
15	8	74.1	3	17.6
16	7	41.2	2	11.8
7	2	11.8	9	52.9
18	-	-	2	11.6

Table 1, it is known that the total research subjects were 34 people. The most research subjects were 17 years old, 9 subjects (52.9%).

Table 2. Characteristics of research subjects based on syndrome differentiation

Syndrome	Group I		Group II	
	N	%	N	%
Spleen and Stomach Yin Deficiency	-	-	4	23.5
Spleen and Stomach Qi Deficiency	8	47.1	2	11.8
Spleen and Gastric Yang Deficiency	6	35.3	-	-
Liver and Gastric Qi	3	17.6	5	29.4

Syndrome	Group I		Group II	
	N	%	N	%
Stasis				
Damp Heat in the Spleen and Stomach	-	-	6	35.3

Table 2. shows that the most diffe-rentiated syndrome in both groups was spleen and stomach qi deficiency in 10 subjects (58.9%). Table 3 the average score in group 1 was 3.3 and group 2 was 2.29.

Table 3. Characteristics of research subjects based on reduction in pain

Reduction Pain	Group I		Group II	
	Mean	SD	Mean	SD
Before Intervention	5.18	0.72	5.29	0.75
After Intervention	1.88	0.85	2.29	0.98

Table 4. Test of Data Normality

Variable	Category	N	Shapiro-wilk (sig.)
Group I	Before	17	0.101
	After	17	0.670
Group II	Before	17	0.683
	After	17	0.212

Table 4 the normality test using the Shapiro Wilk test shows that in group I data the Sig value. before therapy 0.101 and after therapy value 0.67, while group II value Sig. before therapy 0.683 and after therapy value 0.212. Therefore, the data results for group I and group II are normal-ly distributed because the significance value is $p > 0.05$.

Table 5. Homogeneity Test

Group	N	Levene Statistics (sig.)
Group I	17	0.304
Group II	17	

Table 5 homogeneity test using Levene's test for both groups, the significance value was 0.304, which means $p > 0.05$, meaning the data is homogeneous.

Table 6. Paired T- Test

Group	Mean Difference	p
Group I	3.29	<0.001
Group II	2.94	

Table 6 showed the highest average change in pain scale in group I, namely 3.294 with $p<0.001$ which means the significance value is $p = (0.000 < 0.05)$, so Ha is accepted and Ho is rejected.

IV. DISCUSSION

Data analysis in table 1 shows the number of research subjects suffering from gastritis pain in this study was most at the age of 15 years and 17 years with a total of 22 subjects. It is stated that the age of 15-17 years is adolescence which enters the productive age, because at that age they tend to be required to be inde-pendent not to depend on parents, so that adolescents often ignore diet such as paying less attention to the food con-sumed, both the time and type of food that makes them prone to gastric problems[7].

Data analysis in table 2 shows that the most syndrome differentiation in group I is spleen and stomach qi deficiency as many as 8 subjects (47.1%) and group II the number of damp heat syndrome differ-rentiation in the spleen and stomach as many as 6 subjects (35.3%). It can be con-cluded that the syndrome differentiation in both groups is spleen and stomach qi deficiency as many as 10 subjects. The results of the assessment of the research subjects found that the most syndromes were spleen and stomach qi deficiency syndromes, this was due to poor diet, poor nutrition, and poor digestion caused by poor diet, emotional factors, and exce-ssive thinking[8].

Table 3 shows the average mean results of pain scale measurements in group II before treatment amounting to 5.24 and after treatment amounting to 2.29. Table 4 shows the results of the average mean on the measurement of the pain scale in group I before treatment of 5.18 and after treatment of 1.88. Table 5 shows the results of the average mean change in pain scale in group I before treatment of 5.18 and after treatment of 1.88. The average decrease in group I pain was 3.3. The average mean change in pain scale in group II before treatment was 5.24 and after treatment was 2.29. The average decrease in group II pain was 2.29. After analysis in both groups there were changes in the pain scale after the action was taken, although there were research subjects who did not experience significant changes in gastritis pain. The factors that can influence are diet, emotional factors, too much activity, smoking habits, alcohol consumption, and caffeine consumption[9].

Bivariate analysis shows the results of p<0.001 with the average change in gastritis pain scale in group I, then Ha is accepted and Ho is rejected. So, it can be concluded that acupuncture therapy and warm compresses are effective in changing the gastritis pain scale in each treatment group with an average change in gastritis pain scale in group I greater than group II. Improvement of pain mechanisms in acupuncture therapy can be through transduction, and conduction, from the spinal cord to the supra-spinal which can spread throughout the body to stimulate the effect of general analgesia. Not only that, but but acupuncture therapy in gastritis cases can also improve immune function, improve blood circulation, control hormone secretion in the digestive system, control cytokinin, control gastric acid secretion, increase inflammatory reactions, proliferation and apotosis which can strengthen the stomach lining[9].

The method of warm compresses on the abdominal area using buli-buli containing warm water with a temperature of 47.5⁰C for 15 minutes which has proven effective in reducing the pain scale[10]. Warm compresses will stimulate thermos-receptors in the skin to send signals to the brain and then react so as to cause vasodilation (dilation of blood vessels) which results in relaxation in the muscles because the muscles get nutrients and are carried by the blood so that muscle pain decreases[5]. Warm compresses can also improve blood circulation, smooth vascularization and release of the body's endorphin hormone. The pressure of oxygen and carbon dioxide in the blood will increase so that the degree of blood acidity will decrease. Warm compresses also make blood vessels dilate so as to improve blood circulation which is useful for focusing attention on something other than pain and making the body's muscles more relaxed[11].

The discussion above can be concluded that the normality test of the data in this study used the Shapiro Wilk test where the number of samples < 50, namely 34 subjects, and obtained a value of p> 0.05 which means that the data from both groups are normally distributed. The homogeneity test uses the Levene test with the results of p> 0.05 which means that both data are homogeneous. Hypothesis testing uses the Paired T-test test because the data is normally distributed, homogeneous, and paired, with the results of p <0.05 which means Ha is accepted and Ho is rejected. So, acupuncture therapy and warm compresses proved to be effective in changing the gastritis pain scale in each treatment group with an average change in gastritis pain scale in group I greater than in group II.

V. CONCLUSION

The results of the description of the subject criteria obtained the largest results who experienced gastritis at the age of 15 and 17 years and the differentiation of

spleen and stomach qi deficiency syndrome. In group 1 (acupuncture therapy and a combination of warm compresses) before therapy with an average mean pain scale score of 5.18, and after therapy to 1.88. The average decrease was 3.3. In group 2 (acupuncture therapy) before therapy with an average mean pain scale score of 5.24, and after therapy to 2.29. The average decrease was 2.29. So it can be concluded that acupuncture therapy and a combination of warm compresses are more effective in reducing gastritis pain scale compared to acupuncture therapy alone.

From the results of hypothesis testing using the Paired T-test test of the two groups, namely the acupuncture group and the combination of warm compresses and acupuncture groups, both can significantly reduce gastritis pain.

REFERENCES

1. Asiki YS, Tuloli TS, Mustapa MA. Kajian Penatalaksanaan Terapi Pada Pasien Gastritis Di Instalasi Rawat Jalan Di Puskesmas Dungingi. J Syifa Sci Clin Res. 2020;2(2):1–10.

2. Octasari PM, Febyana Dewi Shinta. Gambaran Tingkat Pengetahuan Dan Perilaku Masyarakat Terhadap Swamedikasi Penyakit Gastritis Di Desa Gagaan Kabupaten Blora. J Ilm Manuntung. 2022;8(2):322–9.

3. Purwanto Heni Nur; Yatmihatun, Sri PK. Perbaikan Kualitas Keluhan Gastritis Akut Menggunakan Aquapunktur Titik Zulanli Dan Titik Diji. J Terpadu Ilmu Kesehat. 2013;(Vol 2, No 1 (2013): Jurnal Terpadu Ilmu Kesehatan:168–71.

4. Cantika P SI, Adini S, Rahman A. Penerapan Kompres Hangat Dalam Menurunkan Skala Nyeri Pada Klien Gastritis. Nurs Care Heal Technol J. 2022;2(1):63–70.

5. Khomariyah I, Ayubbana S, Fitri NL. Penerapan Kompres Hangat Terhadap Nyeri Pada Pasien Gastritis. J Cendikia Muda [Internet]. 2021;1(1):67–73.

6. Nirmalarumsari, C., & Tandipasang, F. 2020. Faktor Risiko Kejadian Gastritis di Wilayah Kerja Puskesmas Bantilang Tahun 2019. Jurnal Ners Dan Kebidanan (Journal of Ners and Midwifery), 7(2), 196–202..

7. Eka Novitayanti. Identifikasi Kejadian Gastritis Pada Siswa Smu Muhammadyah 3 Masaran. Infokes J Ilm Rekam Medis dan Inform Kesehat. 2020;10(1):18–22.

8. Liu M, Shen J, Liu C, Zhong H, Yang Q, Shu W, et al. Effects of moxibustion and acupuncture at Zusanli (ST 36) and Zhongwan (CV 12) on chronic atrophic gastritis in rats. J Tradit Chinese Med = Chung i tsa chih ying wen pan. 2020 Oct;40(5):827–35.

9. Suwindiri, Yulius Tiranda. Faktor Penyebab Kejadian Gastritis Di Indonesia. Literatur Review Mahasiswa IKesT Muhammadiyah Palembang, Sumatera Selatan, Indonesia.J Keperawatan Merdeka. 2021;1(November):209–23.

10. Ambarsari W, Sulastri W, Lasmadasari N. Penerapan Akupresur dan Kompres Hangat Dalam Asuhan Keperawatan Pada Pasien Gastritis. J Ris Media Keperawatan. 2022;5(1):6–11.

11. Syamsuddin, A. 2021. Pemberian Kompres Hangat Efektif Untuk Pemulihan Peristaltik Usus Pasien Post Operasi Dengan Anestesi Umum. Jurnal Sago Gizi Dan Kesehatan, 2(1), 95. https://doi.org/10.30867/gikes.v2i1.468.