The Effectiveness of Acupuncture Therapy and Acupressure Therapy as an Effort to Lower Blood Pressure in Hypertension in Productive Age

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ABSTRACT

Hypertension in productive age has become a health threat for all of us. In addition to the use of medical treatment for people with hypertension, hypertension can also be done with complementary therapies which are more effective and do not cause side effects in the treatment of hypertension. Complementary therapies that can be used are acupuncture and acupressure therapy. Analyzing the effectiveness of acupuncture and acupressure therapy in reducing high blood pressure in the productive age population. The method used in this study was a quasi-experimental study with a one group pretest and posttest design. This study was conducted on 24 samples by comparing the experimental class 1 which used acupuncture therapy, the experimental class 2 which used acupressure therapy and the control class which was not given any treatment, then an evaluation was carried out and the results were compared. Patients who used acupuncture therapy experienced a decrease in systolic blood pressure with a value of 17.73% and diastolic blood pressure with a value of 16.44% faster in reducing blood pressure compared to acupressure therapy which had an average value of 13.38% for systolic blood pressure . and 14.19% for diastolic blood pressure. By looking at these results it can be obtained that the most effective therapy in reducing high blood pressure is acupuncture therapy.

I. Introduction

The prevalence of high risk factors for hypertension in Indonesia according to basic health research conducted by the Ministry of Health of the Republic of Indonesia found that people had smoking habits of around 36.3%, lack of physical activity 26.1%, lack of fruit vegetables 93.6%, high consumption sweet 53.1%, consumption of salty food 26.2%. Consumption of high-fat foods, consumption of high-flavoring foods 77.3% and mental disorders 6%. So that it can cause hypertension in productive age, various efforts have certainly been made by the government regarding preventive and promotive efforts. Hypertension is also a health problem with a high prevalence in productive age, which is 34.1%, and data from the 2018 Riskesdas in East Java province shows that the prevalence of hypertension (according to a doctor's diagnosis) in productive age, which is divided into 18-24 year olds, is 13.2%, 25-34 years old 20.1% and 25-44 years old 31.6% (RISKESDAS, 2018). In the City of Kediri, hypertension is included in the 10 most cases of disease from 2017 to 2019. In 2017 the number of cases of hypertension reached 37,609 population units. Then in 2018 the number of cases reached 37,800 residents. The latest data in 2019 reached the number of cases of hypertension 29,362 inhabitants (Badan Pusat Statistik Kota Kediri, 2019).

The description above shows that hypertension in productive age has become a health threat for all of us. In addition to the use of medical treatment for hypertension sufferers, complementary therapy can also be used for hypertension which is more effective and does not cause side effects in treating hypertension. Complementary therapies that can be used are acupuncture and acupressure therapy (Sari, 2018).

Acupuncture is an ancient medical technique that is anchored in traditional Chinese medicine, and has been reported to have the potential to treat cardiovascular diseases, including arterial hypertension (Saputra, 2017). Meanwhile, acupressure is a massage and stimulation technique at certain points or acupoints on the body that are useful for relieving fatigue, improving blood circulation and much more (Heni Setyowati, et al, 2018).

II. Methods

This study uses a quasi-experimental design (Quasi Experimental Design). Experimental research is research that is used to find the effect of certain treatments on others under controlled conditions. A similar opinion was also expressed by Suharsimi Arikunto (2010) who defines experimental research as research that is intended to determine whether there is an effect of treatment on the subject under investigation. The way to find out is to compare one or more experimental groups that were given treatment with one comparison group that was not given treatment.

III. Results and Discussion

Results

From a study conducted on 24 hypertensive patients, 41.7% were aged 36-45 years of which 14 were female and 10 were male. In hypertensive patients, it is generally accompanied by co-morbidities. Associated diseases found by researchers Hypertensive patients at the Syam Syifa Clinic There were 24 hypertensive patients including 50% of hypertensive patients who did not have hypertension co-morbidities, then hypertensive patients with rheumatic comorbidities as much as 33.3%, 12.5% diabetes co-morbidities, and with heart comorbidities as much as 4.16%. Researchers used the Normalization Test to see if blood pressure data were normally distributed or not.

Table 1. Normality Test For Systolic And Diastolic Blood Pressure

	Amount	Significant Value
Systolic	24	.002
Diastolic	24	.003

The systolic and diastolic data before and after treatment were not normally distributed. Therefore, further researchers carried out non-parametric statistical tests using the Kruskall Wallis test to find differences in the three treatments.

Table 2. Kruskall Wallis Test for Systolic Blood Pressure

Group	n	Mean Rank	sig
Acupuncture therapy	8	17.31	
Acupressure therapy	8	13.38	<0,009
No therapy	8	6.81	

The results of the Kurskall wallis test showed that there were differences in the use of acupuncture, acupressure and no therapy. Obtained through the Kruskall Wallis test, namely the sig is 0.009, which means that the data is less than (<0.05). And this shows that there is a difference in systolic blood pressure before and after treatment. For the results, the average value of the decrease in systolic blood pressure in acupuncture therapy patients was 17.73 out

of 24 respondents, for patients with acupressure therapy there was a decrease in systolic blood pressure by 13.38 out of 24 respondents in the clinic, the last one was the control group taking medication namely by not providing any therapy other than taking routine hypertension medication. The average value is 6.81 from 24 respondents.

Table 3. Kruskall Wallis Test Diastolic Blood Pressure

Group	n	Mean Rank	sig
Acupuncture therapy	8	16.44	
Acupressure therapy	8	14.19	<0,012
No therapy	8	6.88	

Obtained through the Kruskall Wallis test, namely the sig is 0.012, which means the data is less than (<0.05). And this shows that there is a difference in diastolic blood pressure before and after treatment. For the results, the average value of a decrease in diastolic blood pressure in acupuncture therapy patients was 16.44 from 24 respondents, for patients with acupressure therapy there was a decrease in diastolic blood pressure by 14.19 from 24 respondents at the clinic, the last one was the control group taking medication, namely by not giving any therapy other than taking routine hypertension medication. The average value is 6.88 from 24 respondents.

Discussion

Respondents taken from this study were respondents in the productive age range. From the results of a study of 24 samples using observation sheets, data was obtained, namely the age of the respondents between 36-45 years or commonly called late adulthood with a percentage of 41.7%. As a person gets older, they are more at risk of developing hypertension. This can happen because of a decrease in the body's organs including the cardiovascular system, in this case the heart and blood vessels. The blood vessels become narrower and the walls of the blood vessels stiffen, causing blood pressure to increase. This is in line with the theory that as a person's age increases, the risk of developing hypertension is very large, this occurs because in old age the large arteries lose their flexibility and become stiff so that blood is forced to pass through narrower blood vessels than usual and results in an increase in blood pressure. High blood pressure often occurs in late adulthood between 36-45 years (Yulia, 2020).

In the Kruskall Wallis test it was found that patients using acupuncture therapy experienced a decrease in systolic blood pressure with a value of 17.73% and diastolic blood pressure with a value of 16.44% faster in reducing blood pressure compared to acupressure therapy which had an average value of 13 .38% for systolic blood pressure and 14.19% for diastolic blood pressure.

The mechanism for lowering blood pressure with acupuncture is still being explored. This is because the pathophysiology of hypertension itself is very complex and is influenced by the interaction of various factors. However, based on existing research, the mechanism of action of acupuncture for hypertension management has been proposed. Segmentally, the stabbing of acupuncture at a certain point triggers stimulation of afferent nerves which will be passed on to the posterior horns of the spinal cord and then to the intermediolateral horns of the spinal cord and preparations that cause resistance to sympathetic stimulation resulting in decreased sympathetic impulses and increased activation of parasympathetic nerves which stimulate vasodilation (Zheng Yu, 2016).

Acupuncture therapy is considered more effective because according to (Saxena T, 2019) acupuncture therapy does have an effect in terms of lowering blood pressure, including in regulating the regulation of vasoactive substances in the endothelium of blood vessels. One of the active substances known to be affected by expenditure and activation through

acupuncture is Natric Oxide (NO). A needle prick at an acupuncture point will stimulate parasympathetic nerve tone and suppress sympathetic nerve tone. The dominant parasympathetic will produce acetylcholine, where the acetylcholine bonds in endothelial cells will induce the formation of local nitric oxide and in the endothelium, which then diffuses into vascular smooth muscle and then changes blood flow and local circulation, which relaxes the smooth vascular muscles.

Acupuncture punctured on meridian points including LI 4 Hegu point, LI 11 Quchi, ST 36 Zusanli, LV = LR 3 Taichong. This point was chosen because it is the point most commonly used in hypertension and Evidence Based Medicine (EBM) proves this can reduce blood pressure because it has a healing effect that is almost the same as the antihypertensive drug Reserpine. In addition, the ST 36 experimental point has been shown to reduce blood pressure and increase NO/NOS activity which plays a role in relaxing blood vessel smooth muscle (Zheng Yu, 2016).

There are several other main benefits of acupuncture therapy that helps deal with complaints in patients with hypertension, including reducing chronic headaches. In addition, acupuncture can also maintain body balance by reducing tension and stress and increasing the body's immunity against environmental changes or disease (Flachskampf, 2007).

Based on previous research and the results of research conducted by the researchers themselves, it can be stated that the examination of acupressure therapy in hypertensive patients is considered less effective because it uses the therapist's fingers. Stimulation using the therapist's fingers is only felt on the superficial surface. Meanwhile, acupuncture therapy performed on hypertensive patients is considered more effective because it uses needle media. In this medium, needle stimulation directly penetrates the skin and can have an effect on the immunological, neurochemical and neurobiological systems directly. Therefore, acupuncture therapy is an effective and safe complementary therapy modality for the treatment of hypertension when compared to acupressure therapy.

IV. Conclusion

There is a difference in systolic blood pressure before and after being given acupuncture therapy, acupressure and without therapy as the control group. There is a difference in diastolic blood pressure before and after being given acupuncture therapy, acupressure and without therapy as the control group. Acupuncture therapy is the most effective therapy in reducing high blood pressure compared to acupressure therapy.

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