Effect of Hydrotherapy Warm Red Ginger to Reduce Blood Pressure on Elderly at Panti Werdha Budi Luhur, Jambi

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Abstract

Context: The process that every human being in the world will experience is aging. In this process, a person will undergo changes and decreased the function of the body's organs, one of which is the cardiovascular system. Disorders of the cardiovascular system can be hypertension. Hypertension can cause several types of complications, such as stroke, kidney failure, and heart disease. Pharmacological and non-pharmacological ways can overcome hypertension. Management of non-pharmacological hypertension can be with complementary therapy, one of which is foot hydrotherapy (soaking warm feet). This study conducted hydrotherapy warm red ginger on the feet of hypertensive sufferers. The purpose of this study was to see a picture of blood pressure before and after hydrotherapy therapy of warm red ginger and its effect on reducing blood pressure — research method with pre-post test one group design. The intervention was carried out six times for two weeks. The data analysis with univariate analysis resulted in average systole before the intervention was 153.1 mmHg, and after was 138.85 mmHg. Besides, the average diastole before the intervention was 86.8 mmHg and after was 83.0 mmHg. Bivariate analysis with pre-post systole resulted in a p-value of 0,000 and pre-post diastole with a p-value of 0.041, which means p-value <0.05. There was an effect of hydrotherapy in warm red ginger with a decrease in blood pressure at the elderly with hypertension. It could be an alternative treatment in patients with hypertension in health services.

Keywords: *Hypertension, hydroxyurea red ginger, blood pressure, old age*

Introduction

Every human being in the world will experience aging. In this process, a person will change and decreased the organs' function. Its reduced function of one organ most often experienced by the elderly. Diseases that mostly affect them include hypertension[1]. WHO data in 2012 reported that as many as 74 million people in the world experienced hypertension, which resulted in around 51% of elderly deaths due to stroke and 45% of coroner heart diseases. In 2025, it is about 29% of the world population will be affected by hypertension, and the biggest sufferers will be the elderly[2]. The elderly often affected by hypertension caused by stiffness in arteries, so that blood pressure tends to increase. In 2015, hypertension was in the third rank, 13.89%[3]. The results of Riskesdas, the prevalence of hypertension rationally reached 8.4% of the measurement of blood pressure at the age of 18 years and over, the incidence of hypertension in Jambi Province ranked 23rd with a case of 5.1% of people[1].

Hypertension can cause several types of complications, such as stroke, kidney failure, and heart disease[4]. WHO data in 2012 reported that as many as 74 million people in the world experienced hypertension, which resulted in around 51% of elderly deaths due to stroke and 45% of coronary heart disease. Management of hypertension can be in the form of taking antihypertensive drugs, managing diet, exercising, reducing stress, avoiding alcohol, and smoking[5]. Another method of treatment can use a holistic nursing approach that is complementary therapy[6].

Complementary therapies are massage, herbal, aromatherapy, and foot hydrotherapy[7]. One of the complementary therapies used for independent and natural intervention is foot hydrotherapy (soaking warm feet)[8]. Foot Hydrotherapy that soaks the foot in warm water will provide a local response to heat through this stimulation will send impulses from the periphery to the hypothalamus[9]. Other herbal ingredients, one of which is ginger, are better added in soaking foot[10]. Ginger that widely used for medicine is red because red ginger has a higher essential oil content compared to other ginger[11]. The warmth and spicy aroma of ginger because of its content of essential oils (volatile) and oleoresin compounds (gingerol). Warm feeling in ginger can widen blood vessels, so that blood flow is smooth[12].

Research by Nurahmandani, A.R, et al. (2016) on the effectiveness of giving warm ginger foot bath therapy to the decrease in blood pressure in the elderly with hypertension in Semarang ivory Semarang Werdha, it was found that there was an effect of giving warm ginger foot soak therapy to a decrease in blood pressure in elderly with hypertension at Pucang Gading Nursing Home in Semarang[13]

Nursing Home is a social welfare institution established to improve the quality of life and welfare of the elderly[14]. TresnaWerda Social Institution Budi Luhur Jambi City has 67 older people with more than 40% suffering from hypertension, and some are dependent on the use of pharmacological drugs.

The specific purpose of the study was to determine the effect of hydrotherapy, by Soaking feet in Ginger Warm Water against the Decrease in Blood Pressure in the Elderly at Budi Luhur PSTW Jambi The incidence of hypertension continues to increase every year with the increasing number of older adults due to increased life expectancy. The elderly with hypertension continues to depend on pharmacological drugs to overcome the disease. The problem in this study is if hypertension is not immediately above, then it will continue to cause complications such as heart problems, blood vessel disorders to death. Therefore, it is necessary to prevent complications of the elderly with hypertension using hydrangeas red ginger.

Methodology

This research method uses pre-post-test one group design. The analysis was carried out in the form of univariate analysis, which was to see a picture of blood pressure before and after the treatment of warm red ginger foot soak. As well as bivariate analysis to see the effect of hydrangea red, warm ginger on blood pressure reduction in the elderly with paired test with pre-post sistole results with p-value 0,000 and pre-post diastole with p-value 0.041, which means p-value <0, 05.

Material and Tool: Materials and equipment used in this study include hot water with temperatures ranging from 39-42ºC, hot water flask, red ginger, basin, water thermometer, towels, cold water, digital tension. And research instruments in the form of observation sheets.

A. Research Procedure: The research procedure was out several stages, first carried out a pretest (a measurement of respondent's blood pressure), then the process of soaking the feet with warm ginger water, including:

a. Give the patient a sitting position with dependent feet.

b. Fill the bucket with cold water and hot water until it is half full then measure the temperature of the water (39-42ºC) with a thermometer.

c. If the feet look dirty, wash first.

d. Dip and soak feet for 10-15 cm above the ankles then leave for 15 minutes.

e. Take a temperature measurement every 5 minutes, if the temperature drops, spill hot water (feet lifted from the bucket) again, and measure the temperature of the thermometer again.

f. Cover the bucket with a towel to maintain the temperature.

g. When finished (15 minutes), lift the leg and dry it with a towel.

h. Tidy up the Tool: After retaking action, the measurement of blood pressure (post-test) and recorded in the observation sheet. The pre-test is done every time before giving an intervention and after that post-test. The response was carried out for two weeks, with six interventions for each respondent.

Research Result

Responden Characteristic:

1. Age:

Table 1: Frequency distribution based on age at Tresna Werdha Budi Luhur Social Home in Jambi City in 2019

No	Age	f	(%)
1.	Elderly (60-74 years old)	14	70
2.	Old (75-90 years old)	6	30
	Total	20	100

Based on the table above, the distribution of respondents based on age 70% (14) respondents were elderly (60-74 years). Patients aged over 60 years have a risk of suffering from hypertension. Triyanti (2014) conveyed that the age factor is very influential on the incidence of hypertension because with increasing age, the higher the risk of hypertension.

2. Sex:

Table 2: Frequency distribution of respondents by sex at Tresna Werdha Budi Luhur Social Home Jambi City in 2019

No	Sex	f	(%)
1.	Male	14	70
2.	Female	6	30
	Total	20	100

Based on the table above, the distribution of respondents based on gender 70% (14) respondents were male. Gender is very carefully related to the occurrence of hypertension in young people, and middle age is higher suffering from hypertension in men[15].

Bood Pressure before and after Hydrotherapy Warm Red Ginger in the Elderly with Hypertension:

Table 3: Frequency Distribution of Respondents Based on Blood Pressure Before and After Hydrotherapy Warm Red Ginger in the Elderly with Hypertension

Variable	Mean	SD	SE	n
Sistole Pre	153.10	13.780	3.081	20
Sistole Post	138.85	13.417	3.000	20
Diastole Pre	86.80	9.105	2.036	20
Diastole Post	83.00	10.443	2.335	20

Based on the table above shows that the average systole before the intervention was 153.1 mmHg, while the average systole after the intervention was 138.85 mmHg with a standard deviation before 153.1 and after 138.85. Meanwhile, the average diastole before being given response was 86.8 mmHg and after being given 83.0 mmHg with a standard deviation before 9.105 and after 10.44.

Respondents in this study are all elderly who suffer from essential hypertension. Hypertension often occurs in the elderly due to changes in the cardiovascular system. For example, an elasticity decreased in the aortic wall, heart valves thickened and stiff, the ability to pump blood decreased as much as 1% every year, loss of elasticity in blood vessels, and its increase in blood pressure because of its resistance from peripheral blood vessels[16].

Effects of Warm Red Ginger Hydrotherapy on Reducing Blood Pressure in the Elderly at Pstw Budi Luhur, Jambi City in 2019

Variable	Mean	SD	df	P-Value	n
Siastole Pre -Siastole Post	153.10 138.85	14.581	19	.000	20
Diastole Pre - Diastole Post	86.80 83.00	7.750	19	.041	20

Based on the results of the bivariate analysis above, it showed that the pre-post test systole with a p-value of 0,000, while the pre-post diastole with a p-value of 0.041, which means p-value <0.05. It means that there was an effect of hydrotherapy with warm red ginger with a decrease in blood pressure in the elderly with hypertension at PSTW Budi Luhur Kota Jambi.

Discussion

Effects of Warm Red Ginger Hydrotherapy on Reducing Blood Pressure in the Elderly at Pstw Budi Luhur, Jambi City in 2019

Based on the results of the study showed that the average decrease in systolic blood pressure before and after 14.25 mmHg, and the average decrease in blood

pressure of 3.8 mmHg. These results indicate that there was a decrease in blood pressure, both systole, and diastole, after administration of the red ginger hydrotherapy intervention. However, the results of blood pressure measurements found only one respondent (5%) who experienced stable blood pressure and one person (5%) respondents who experienced an increase in blood pressure after being given hydrotherapy red ginger. It because respondents are in a state of anxiety and emotion. Stress conditions experienced by respondents can affect the blood pressure of respondents. According to the literature explained that terms of anxiety, fear, pain, and emotional stress could result in sympathetic stimulation, which can increase the frequency of heart rate, cardiac output, and vascular resistance. It was also evidenced by Sasmalinda research through multiple linear regression tests showing that age and stress factors affect the increase in blood pressure in patients at the Malalo Batipuh Selatan health center. Women's research results (2019) indicates that there is a relationship between stress (p-value = 0.003) and physical activity (p-value = 0.018) with a blood pressure of patients with essential hypertension.

Several national and international research findings on the benefits of red ginger for hypertension show different results. The results of the study by Nurahmandani et al. (2016) showed that there was an effect between giving foot bath therapy with warm ginger water on decreasing blood pressure in the elderly with hypertension in panning Semarang with p-value systole = 0,0001 and p-value diastole = 0,0001. Soak the warm feet of ginger water to provide therapy that relaxes the muscles. Sanghal's research results (2012) showed that red ginger is effective in preventing hypertension. The results of the study showed a statistically significant difference in the study group after consuming ginger for one month, whereas the control group did not[17].

The results of this study and previous research studies strongly recommend ginger as an herbal therapy program to support conservative therapy for chronic diseases, especially hypertension. For this reason[15], the Puskesmas should recommend providing ginger hydrotherapy for herbal-based nursing interventions for families with hypertension.

Conclusion

The conclusion in this study was the average blood pressure after hydrolyzing warm red ginger has decreased, and there is a hydrotherapy effect of warm red ginger on reducing blood pressure in the elderly with hypertension.

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Conflict of Interest: The authors confirms that this article contains no conflict of interest.

Ethical Approval: This study was approved by the Health Research Ethics Committee (KEPK) University Andalas University, Padang. All participants were providede with a participant information sheet written in Bahasa Indonesia, and they signed the consnt from prior to participating in the study

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