

EFFECT OF MUSA ACUMINATA CAVENDISH SUBGROUP (AMBON BANANA) IN REDUCING BLOOD PRESSURE

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Abstract

Hypertension is a public health problem that occurs a lot, many people do not realize that they suffer from hypertension, this is due to symptoms that are not real and at an early stage before causing serious health problems, new symptoms are evident at age 50s. Because Its presence is still difficult to detect and control, it is not surprising if hypertension is dubbed as "the silent killer" or an unexpected killer (Julianti.2005). The chemicals contained in hypertension drugs will have an impact on the body if taken too long. Nonpharmacological therapy can be given to patients with hypertension such as Banana Ambon (Musa Acuminata). Ambon banana plant (Musa acuminata 2011) flourishes in tropical regions such as Indonesia (Yuliarti, 2011). Besides its relatively safe and healthy use, Ambon banana is also cheap and easy to obtain. But now its existence is only known as just fruits and basic ingredients for making snacks and drinks. Therefore, research on Ambon banana is very important to do. The purpose of this study was to analyze the effect of Cavendish Subgroup Musa acuminata (Ambon Banana) in Reducing Blood Pressure.

Keywords : musa acuminata cavendish subgroup, ambon banana, blood pressure

1. INTRODUCTION

Hypertension is a public health problem that happens a lot, many people do not realize that they suffer from hypertension, this is due to symptoms that are not real and at an early stage before causing serious health problems, the new symptoms are clearly visible at age 50- an. Generally there have been more severe complications or diseases such as a heart attack or stroke. Because of its presence that is still difficult to detect and control, it is not surprising that hypertension has been dubbed "the silent killer" (Julianti et al, 2005). Hypertension has been a concern of world health organizations since the 1950s. Based on prevalence throughout the world in 2013, hypertension spread to almost all segments of society. At present it is estimated that nearly 1 billion people in the world suffer from hypertension with a prevalence of 26.4%. The high prevalence of hypertension makes it the highest risk factor for cardiovascular disease (WHO, 2013). Based on the 2013 national basic health research data (RISKESDAS), the national prevalence of hypertension in people aged 18 years is 38.8%. Herbal alternative therapy is a therapy that is in great demand by people throughout the world, including in Indonesia. Besides the medical costs. issued not much, also felt very not cause side effects. Herbal non-pharmacological therapy is one of them is the consumption of Ambon banana. Both consumed directly or made in dosage forms. Herbs can reduce additional risk further due to consumption of chemical drugs for a long time. Banana (Musa Acuminata Cavendish Subgroup) is one of the most beneficial plants in the world, especially in tropical regions such as in Indonesia. Banana fruit has very good nutritional and

nutritional value. Banana meat is rich in potassium and is believed to reduce blood pressure (Megawati Rusli, 2009). Based on several studies there are benefits from the nutritional content of bananas (*Musa acuminata* Cavendish Subgroup), one of the nutritional components in bananas can help lower blood pressure so that hypertensive patients do not have to take chemical drugs during their lifetime. In Indonesia, research related to these bananas to a decrease in blood pressure is still relatively small, thus providing a rationale for researchers to prove whether there is an effective effect on decreasing blood pressure.

2. MATERIALS AND METHODS

This study uses quasi experimental research methods. The experimental method is interpreted as a method with a systematic form with the aim to find the influence of variables one with other variables by providing special treatment and strict control in a condition. The approach used with the pre-test and post-test nonequivalent control group, where the respondents were divided into 2 groups. This design involved two groups given the pre-test (O), given treatment (X) and were given a post-test. And the other groups were not given treatment. Treatment success was determined by comparing the values of blood pressure measurements in each group.

The first step is to determine the sample that will be used as the research sample and group it into two research classes. The next stage was in the treatment group and the control group measured blood pressure before being given treatment. While consuming Ambon banana the subject is not allowed to consume any medicines. Then the sample in the treatment group was given consumption of Ambon banana with 2 fruits every day for seven days. Whereas in the control group not given bananas, only taking drugs given by the medical. Blood pressure measurements were carried out 30 minutes before and 4 hours after treatment or consumption of ambon bananas Blood pressure measurements in two groups were carried out at the same time. Samples were obtained using convenience sampling. The tools used to support this research are, Observation Sheet, Mercury Sphygmomanometer and Stethoscope, Ballpoint Pen, and Banana Ambon (*Musa Acuminata* Cavendish Subgroup). This experimental procedure is carried out with the following steps:

1. Preparation stage, including: Research design, data collection and literature study,
2. The implementation phase of the study includes: grouping samples in two research classes, carrying out blood pressure measurements before and after treatment. *Pengolahan dan analisis data dengan uji wilcoxon signed ranks test dan uji Mann Whitney*
3. Conclude the results of the study

3. RESULT AND DISCUSSION

Complementary herbal therapies can be used as an alternative treatment / cure for an illness. Complementary therapy when linked to nursing is defined as a solution to healing problems that are selected and used in nursing practice to improve health, obtain healing and quality of life, life balance, and the scope of holistic care (4). One herbal therapy is to consume Ambon banana (*Musa acuminata* Cavendish Subgroup). Banana (*Musa Paradisiaca*) is one type of tropical fruit that thrives and has an even distribution area throughout Indonesia (Marginingsih, 2007). Where bananas are one of the leading horticultural commodities in Indonesia (Directorate General of Horticulture, 2012). Bananas rich in minerals such as potassium, magnesium, iron, phosphorus, and calcium, also contain vitamins B, B6 and C and serotonin which are active as neurotransmitters in the smooth functioning of the brain (Prabowati,

Suyanti, and Setyabudi, 2008). Bananas contain lots of potassium, a good content of potassium for people with high blood pressure. The combination of high potassium and very low salt makes fruit bananas useful for people with high blood pressure. Potassium content in Ambon banana works similar to anti-hypertensive drugs in the human body.

Banana Ambon contains potassium which can cause inhibition in the Renin Angiotensin System also causes a decrease in aldosterone secretion, resulting in a decrease in reabsorption of sodium and water in the kidney tubules. As a result of this mechanism, there is an increase in diuresis which causes a reduction in blood volume, so that blood pressure also decreases (Puspaningtyas, 2008). Puspitaningtyas (2014) also stated that ambon bananas have a higher potassium content that can be efficacious to help reduce the risk of stroke and lower blood pressure. WHO (2012) recommends increasing potassium intake from food to reduce blood pressure and the risk of cardiovascular disease, stroke and coronary heart disease. The recommended potassium intake is 3510 mg / day, and one of the foods containing high potassium is Ambon banana, which is around 435 mg / day. By consuming potassium in accordance with these recommendations can be a protection against this condition

Table 1. Characteristics of Respondents by Age, Gender, and Education Working Area of Karanganyar Health Center

No	Characteristics of Respondents	Treatment		Control	
		n	%	n	%
1	Age				
	<= 60	12	60.0	8	40.0
	> 60	8	40.0	12	60.0
		20	100.0	20	100.0
2	Gender				
	Male	8	40.0	12	60.0
	Female	12	60.0	8	40.0
		20	100.0	20	100.0
3	Education				
	Primary school	8	40.0	9	45.0
	Junior high school	4	20.0	4	20.0
	Senior High School	8	40.0	7	35.0
		20	100.0	20	100.0

Based on Table 1. shows that of the 20 respondents in Group I, the age of tahun 60 years (elderly) is more than 12 respondents (60%), while in group II, the most at age \geq 60 years (old) which is 12 respondents (60%). In the sex characteristics of Min group I, female sex is 12 respondents (60%) inversely proportional to group II where male sex is 12 respondents (60%). Based on the characteristics of the level of education in group I, Primary school and Senior High School amounted to the same, namely

each of the 8 respondents (40% and 40%) while in group II, the level of primary education was more, 9 respondents (45%).

Table 2. Respondents' Blood Pressure Before Given Banana Ambon in the Karanganyar Health Center Working Area

No	Blood pressure measurement results	Treatment		Control	
		n	%	n	%
1	Stage 1 TD ≤ 159/99 mmhg	1	5.0	1	5.0
2	Stage 2 TD ≥ 160/100 mmhg	19	95.0	19	95.0
		20	100.0	20	100.0

Based on Table 2 shows that in both groups the proportion of the results of the same blood pressure measurement was Stage 1 (TD ≤ 159/99 mmhg) in 1 respondent (5%) and Stage 2 (TD ≥ 160/100 mmhg) as many as 19 respondents (95 %)

Table 3. Respondents' Blood Pressure After Given Banana Ambon in the Karanganyar Health Center Working Area

No	Group	Mean	Z	P value
1	The group I Treatment ≤159/99 ≥ 160/100	3,50 10,87	-1,528	0.027
2	The group II Control ≤159/99 ≥ 160/100	1,00 11,00	-4,359	0.056

Based on Table 4, the results of the analysis using statistical tests obtained p-value in group I = 0.027 and (p <0.005) which means there is a difference between the results of blood pressure measurements before and after intervention (administration of Ambon banana) while in group II obtained p value value of 0.056 which means there is no significant difference in blood pressure measurements before and after.

4. CONCLUSION

The results of our research can be concluded that the elderly blood pressure before given Ambon banana (*Musa Cavendish* Subgroup expression) is classified as stage 1 hypertension and stage 2 hypertension. Elderly blood pressure after being given Ambon banana (*Musa acuminata Cavendish* Subgroup) has decreased with p- value 0.027 and (p <0.005) which means that there is a difference between the results of blood pressure measurements before and after the intervention (administration of Ambon bananas) in elderly hypertensive patients in the work area of the Karanganyar Health Center.

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