

DOI:

10.22301/IJHMCR.2528-3189.12

Article can be accessed online on:
<http://www.ijhmcr.com>

ORIGINAL ARTICLE

**INTERNATIONAL JOURNAL
OF HEALTH MEDICINE AND
CURRENT RESEARCH**

EFFECT OF GOLOBE FRUIT (*HORNSTEDTIA ALLIACEA*) TOWARD THE DECREASING OF BLOOD PRESSURE AT PREGNANT MOMS WITH HYPERTENSION

**Nova M. Wulur¹, Arend L. Mapanawang², Masye E. Tokalese⁴, Maria Rantung⁵,
Rasmin Hi. Abd. Mutalib⁶, Deiby Rumbajan⁷, Selvie S. Ticoalu⁸,
Santje M. Tooy⁹, Leady D. Lamidja¹⁰**

¹ Mideifery Program of Akbid Makariwo Tobelo, North Halmahera, North Moluccas, Indonesia.

² Medika Mandiri Foundation Halmahera, North Halmahera, North Moluccas, Indonesia.

ARTICLE INFO

Article History:

Received 7th June, 2016

Received in revised form

5th July, 2016

Accepted 9th August, 2016

Published online 30th September,
2016

Key words:

*Golobe Fruit (Hornstedtia alliacea),
Hypertension, Pregnant Moms.*

***Correspondence to Author:**

Latifah Anandari, Astuti Giantini

Mideifery Program of Akbid
Makariwo Tobelo, Medika Mandiri
Foundation Halmahera, North
Halmahera, North Moluccas,
Indonesia.

E-mail:

novawulur@yahoo.com

ABSTRACT

Hypertension was disease which categorized as the silent killer. One solution to solve it was by giving Golobe fruit (*Hornstedtia alliacea*), because it has special benefit to decrease hypertension included at pregnant moms. Golobe fruit Halmahera is fruit which grows in tropical area including in Halmahera land. This fruit has sweet-sour, it's leaf is narrow lancet, has seed and the color is black. The one of chemical content in golobe seed is paridin, that has role and give pharmacologist activities, fitochemical screening, and compound class such as antioxidant.

The aim of this research was to know the effect of giving golobe fruit toward the decreasing of blood pressure at pregnant moms with hypertension. Kind of this research was experiment with independent variable, giving golobe fruit, and dependent variable, decreasing of blood pressure at pregnant moms. Number of opulation was 20 people with 6 respondents with hypertension.

From the research result done by Paired Sample T-tes, it obtained the value of $p=0,020$ & $p=0,423$ for sistolik blood pressure & diastolik blood pressure at ezperiment group. Whereas at the control group, it was obtained the value of $p=0,423$ for sistolik blood pressure, and diastolik blood pressure with $p=0,423$.

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Citation: Nova M. Wulur¹, Arend L. Mapanawang², Masye E. Tokalese⁴, Maria Rantung⁵, Rasmin Hi. Abd. Mutalib⁶, 2016 "Effect Of Golobe Fruit (*Hornstedtia Alliacea*) Toward The Decreasing Of Blood Pressure At Regnant Moms With Hypertension", *International Journal of Health Medicine and Current Research*, 1 (01), 12-16

Thereby, it could be concluded that by consuming globe fruit could decrease blood pressure at pregnant moms, because in globe fruit contained some compounds such as Beta-Caryophyllene, Etil, Metil, Dihidro-Piridin, Vitamine E which were also contained in anti hypertension medicine which effectively decrease blood pressure. Based on laboratory test done, in fact, among some bioactive component contained in globe, there was compound which also contained in anti hypertension medicine such as Beta-Caryophyllene, Etil, Metil, Dihidro-Piridin, Vitamine E.

INTRODUCTION

Millenium Development Goals (MDGs) was Millenium Declaration, the result of agreement among the Presidents and delegations from 189 nations of United Nations (PBB) started on September 2000, in the form of eight points of objective to be reached in 2015. The target was attaining citizen's prosperity and people developing in 2015. From the eight points of MDG, the fifth objective was increasing moms' health, with the target to decrease the moms death rate for about three fourth between 1990 – 2015, and the indicators for monitoring were moms death rate, proportion of partus caring by skilled paramedic, and contraception using rate. Moms Death Rate (AKI) was one indicator to see the women's health degree. The moms death rate was also one of target determined in the objective of millenium development, that was the fifth objective of increasing the moms health where the target would be reached until 2015 was decreasing to $\frac{3}{4}$ risks of moms death.

Hypertension is disturbing at the blood circulation system which could cause increasing of blood pressure up the normal value that is more than 140/90 mmHg. Hypertension in pregnancy is that there is blood pressure which more than 140/90 mmHg at the pregnancy period. There was an increasing of hypertension prevalensi from 7,6% in 2007 became 9,5% in 2013. Until recent time, preklamsi and eklamsi were still being the midwifery problem which hadn't been solved totally. Preklamsi is a disease which its number of occurrence is different in each country. Its number of occurrence was more often in developing countries than in developed countries. This was because the prenatal caring in developing countries was better. Preklamsi was influenced by parity, race, genetical and environment factors. Pregnancy with preklamsi generally occurred in primigravida, whereas in the multigravida related with chronical hypertension, diabetes, and kidney problem. Supryanto,2012).

Golobe (*Hornstedtia alliacea*) is a kind of plant produced fruit member of ginger (*Zingiberaceae*). Its fruit which was sweet and sour, usually eaten freshly. Its other names are ketimbang ketanim (Lampung) and

Golobe (Halmahera). The stem of flower appeared near the base of stem. The cheny red was labellum.

Golobe Halmahera (*Zingiberaceae*), is a plant which grows in trop, included Halmahera. The using of Golobe (*Zingiberaceae*) by the people in Halmahera, are as energy supplier when they hunting in the jungle, treating the injury and infection, and herb for peptic's problem, its fruit and seeds were consumed by all ages, children and adults continuously was more than 4 generations in Halmahera. (Mapanawang, Arend L.2015).

The benefit of Golobe Fruit (*Hornstedtia alliacea*), among some bioactive components contained in Golobe, there was vitamine E which was strong enough antioxy to increase stamina, protect blood vessel which brought the oxygen to all body from damage, help solve stress, minimalize the risk of cardiovascular problem such as coronary hearth and hypertension

Based on the laboratory test done, there were compounds contained in Golobe fruit, such as: 2,3 - Dihydro-3,5 - Dihydroxy-6 -Methyl 5,31 %, Beta-Caryophyllene 4,74 %, Alpa-Humule 12,46 %, Hexadecanoid Acid , Ethyl ester 1,22 %, Palmitic Acid 7,29 % , 2 - Formyl - 5 - Isopropyl - 8 - Methylspiro 2,22 % , 3 H - Cyloprop (1,2)-5-cholest - 1 - en 1,40 % , 9,7- Octadecadienal 14,19 % , Nona cosane Hipertensi 2,81 % , 2,6 Diethyl pyridine 5,88 % , C6-D-Indolinocodeino 2,94 % , Docosane 6,13 % , 11 - Tricosene 1,38 % , Heptacosane 96 % , Trans - caryophyllene 55 1,91 % , Cyclo pentane 1,57 % , Cyclo Hexane (Flatanoid) 3,98 % (Source : Arend et.al. 2016)

Based on the data from Puskesmas Pembantu Berdasarkan data yang diperoleh dari Puskesmas Pemin Pediwang village, number of pregnant moms with hypertension on January – December 2015 was 7 persons, and on January-April 2016 was 5 persons. From that data, it showed that if the pregnant moms didn't get good caring, so the condition became more poor and could threaten them. The hypertension at pregnant moms, if it wasn't solved eventually, could direct to preklamsi and then could direct to eklamsi. Based on the data, researcher was interested to analyze the effect of consuming Golobe toward the decreasing of blood pressure, especially for pregnant moms with hypertension.

METHODS

This research used *Quasy Eksperiment Design Control Group* with designs of pretest and posttests of control groups. First group was given the experiment and the second group wasn't. The group which was given the experiment called experiment group and the group which wasn't given the experiment called control group.

There was done one time measurement before (Pretest) for both groups, then the first group was given the experiment (experiment group) and the second group (control group) wasn't given the experiment. After that, it was done the re-measurement (Post test) for both of the groups. This aimed to see the comparison pascaperiment (experiment group) and group which wasn't given the experiment (control group).

SAMPLE

The data collecting technique in this research was sampling incidental, technique of sample determining by

incidentally, whomsoever who was incidentally met the researcher could be used as sample, if they viewed suitable as the data sources. Number of samples in this research were 4 respondents, who divided into control group of 2 respondents and at the experiment group of 2 respondents.

RESULTS

The research was done in Puskesmas Pembantu of Pediwang village, North Kao Subdistrict, North Halmaher Regency from May until June 2016. The material used in this research was Golobe fruit (*Horstedtia alliacea*) which was eaten directly of 3 cloves each consumse in the morning and in the evening. From total of 6 respondents, the respopndents' characteristic based on the ages were 21-30 years old of 3 respondents (50%) and 31-40 hyears old of 3 respondents (50%).

Data of Blood Presure Measurement Result at Experiment Group (1) & Control Group (2)

Table 1. Result of Average Test of Blood Pressure before the Giving of Golobe

No Respondents	Code Respondents	Pre Test	Post Test
1	1	160/100	120/80
2	1	180/80	150/90
3	1	170/90	120/70
4	2	140/100	130/90
5	2	150/100	150/100
6	2	130/90	130/90

Table 2. Result of Average Test of Blood Pressure after the Giving of Golobe

Blood Pressure Before	Mean	Median	Standard Defiasi	Min	Max
Sistolik	155.00	150,5	18.708	130	180
Diastolik	93.33	90,5	8.165	80	100

Table 3. Analysis of T-test Blood Pressure at Experiment Group

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_Test	170.00	3	10.000	5.774
	Post_Test	130.000	3	17.321	10.000

Paired Samples Correlations			
	N	Correlation	Sig.
Pre_Test - Post_Test	3		

Pair 1	Pre_Test & Post_Test	3	.866	.333
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		Paired Samples Test							
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
Pair	Pre_Test Post_Test				Lower	Upper			
1		40.000	10.000	5.774	15.159	64.841	6.928	2	.020

Table 4. Analysis of T-test Blood Pressure at Control Group

		Paired Samples Test							
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
Pair	Pre_Test Post_Test				Lower	Upper			
1		10.000	17.321	10.000	-33.027	53.027	1.000	2	.423

From the test result at experiment group, it was obtained significancy value of $p=0,02$ ($<0,05$) and at control group it was obtained the value of $p=0,423$ ($>0,05$). Thereby, it could be describe that there was effect of giving golobe toward the decreasing of blood presure at experiment group ifthe value of $p<0,05$. Whereas at the control group, there wasn't effect of giving Golobe fruit toward the decreasing of blood pressure if the value of $p>0,05$

DISCUSSION

Golobe Fruit Halmahera (*Horstedtia alliacea*) was proven that it has many pharmacology activities. Chemical content which was contained in extract of Golobe Halmahera seeds had role in giving pharmacology activities, fitochemical screening was aimed to give description about compound class, antioxidant contained in the plant in research.

In the research of consuming golobe during 7 days, it showed the fact that at experiment group got decrease of blood pressure. One of compound in Golobe fruit which was able to decrease blood pressure was pyridine of 5,88%. But, there was also other compound which contributed to the blood pressure, such as *Nona cosane Hipertensi* 2,81%.

The disease in a human body is caused by some factors, one of them is free radical. Free radical is a radical based on oxygen or nitrogen with single electron

which generally produced in the human body when the metabolism process is going on. Over loaded Free radical could cause degenerative disease, diabetes, coroner hearth, and cancer (Winarisi,2011).

Consuming golobe fruit regularly could decrease blood pressure at pregnant moms. This was proven at the research which done during 7 days at the pregnant moms with hypertension, the result showed that respondents' blood pressure could decrease slowly and didn't arise side effect. So that, this fruit was very good consumed by pregnant moms with hypertension.

The decreasing of blood pressure was related to hearth work where the mechanism of system control of respiration nerve influenced the rapidly of hearth beat and the blood pressure change adjusted with the rapidly of respiration after being given golobe fruit.

CONSLUSION

Considered from the benefits and side effect, golobe plant was one of herbal medicine where it's benefit was gretaeer than it's side effect. It was different with modern medicines which it's risks and dangerous was higher.

Respondents who didn't consume Golobe fruit didn't get decreasing of blood pressure. It was known that the different process of decreasing the blood pressure at pregnant moms who consumed golobe and didn't consume was because golobe plant contains

pyridine 5,88%, and very high antioxidant which could decrease the blood pressure.

People di Pediwang village of North Kao Subdistrict consumed golobe fruit because of some factors, such as economic factor, that was appropriate with almost people's job as farmer. Golobe fruit was able to grow at all seasons and it was easy found so that could save the family cost. The fertile land caused Golobe fruit didn't need special caring. And it was proven, at parts of people who had consumed Golobe fruit, that golobe fruit had special benefit.

ACKNOWLEDGEMENTS

Government of North Maluku, Government of North Halmahera, Medika Mandiri Foundation, Botany Laboratory of Lipi Bogor West Java, Laboratory of DKI Jakarta, Laboratory of Akbid Makariwo North Maluku (jalan raya puskesmas gosoma Tobelo Halmahera Utara)

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