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THE EFFECT OF GEDI LEAF DECOCTION (*Abelmoschus manihot*) TOWARD HB INCREASING AT PERTURITION MOM WITH ANEMIA

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ABSTRACT

The death rate and illness of pregnant mom, born, and porturition still occured as big problem in developing country including Indonesia. Survey result of Demografi Kesehatan Indonesia (SDKI) 2013 stated that AKI in Indonesia was 359 per 100.000 live birth. One of the cause was Anemia. Anemia in the porturition period was defined that hemoglobin degree was less than 10g/dl. The efforts to overcome anemia at porturition mom nationally was done through increasing the iron suplement. The increasing of Hb degree at poturition mom through herbal, such as using the decoction of gedi leaf. The mineral contained in gedi leaf can smooth the forming process of hemoglobin in the hemotrokit. The aim of this research was to analyze the effect of gedi leaf decoction toward the increasing of hemoglobin at porturition mom with anemia in Tiberias Maternity Hospital.

This research was experiment research by using pretest dan posttest control group approach with the samples of 6 persons who was divided into experiment and control groups. The data collecting method used interview guide, and the measurement of Hb degree used Hb sahli tool, then the data were analyzed by using Paired statistics test sample T-test with sense degree p<0,05.

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Statistics test result produced p-value 0,002 (p<0,05) at the experiment group and p-value 0,667 (p>0,05) at the control group. Thereby, it could be concluded that there was an effect of gedi leaf decoction toward the increasing of Hb at porturition mom with anemia in Tiberias Maternity Hospital.

INTRODUCTION

In a poor country, there were about 25-50% death of eligible woman stated still related with pregnance, partus and porturition. Generally, anemia occured in all the worlds, especially in the developing country and in lower socio economy groups. For the adult group, anemia occurred at the eligible woman, especially pregnant and porturition moms because they experienced of defisiensi Fe. As a whole, anemia occured at 45% women in the developing country and 13% in developed country. In America, there were 12% eligible woman (WUS) 14-49 years old, and 11% pregnant woman got anemia.

The number of women who died because of compplication during the pregnance and porturition was decreasing about 45% from the estimation of 523000 in 1990 and 289000 in 2013. The progression was very important, but the descent degree each year was less than which was needed to reach *Milenium Development Goal's* (MDG's). The target of decreasing the number of mom death was 75% between 1990 and 2015 (WHO, 2014).

Survey Result of Demografi Kesehatan Indonesia (SDKI) in 2013 mentioned that AKI in Indonesia was 359 per 100.000 live birth. Survey Result of Demografi Kesehatan Indonesia (SDKI) 2013 states that MMR in Indonesia amounted to 359 per 100,000 live births. Whereas, the target in *Millennium Development Goal* (MDGs) was 102 in 2015. One factor of the height AKI in Indonesia was caused by anemia.

Based on Riskesdas data (2013), the groups of pregnant and porturition mom were groups with high risk of getting anemia, although generally it was anemia relative caused by physiology change during the pregnant. Anemia in the population of porturition mom acording to WHO and Kemenkes guide 1999, was 37,1% and the prevelansi was almost same between porturition mom in urban area (36,4%) and rural area (37,8%). It showed that closed to severe public health problem with prevalensi limit of anemia more than 40% (Riskesdas, 2013).

Based on the Profile of Health Department of North halmahera, AKI in 2015 was 5 persons with cause of hemorrhagic were 3 persons (6%), SC was 1 person (2%), and metabolic disturbance was 1 mom (2%). Whereas in 2016, from January to May, AKI were 2 moms with the cause of hemorrhagic was 1 mom (5%) and ekalmsi (5%). (Dinkes of North Halmahera, 2015).

From the survey on 1 January 2016 until 30 June 2016 in Tiberias Maternity Hospital, there were 69 porturition mom, 15 (21,7%) of them got hemorrhagic and claimed anemia at the porturition period. (Tiberias Maternity Hospital, 2016).

Anemia at poeturition mom still became one of health problem in Indonesia because it's prevalensi was high enough. The main cause of anemia is lasck of iron (Fe) because during the pregnance there was increasing of iron needs about three times for the fetus growth and mom's need so that pregnant moms with anemia who weren't being treated rapidly could cause hemorrhagic when they were doing partus and those moms could relate to the anemia during the porturition. (Depkes RI, 2010).

Government through Departemen Kesehatan (Depkes RI, 2010) did a proram of giving the tablet of iron to pregnant moms and porturition moms as th effort to solve the problem of anemia iron nutrient. Suplementation of iron tablets dan nutrient improvement were important efforts in preventing and solving the anemia problem. The preventing program of anemia at pregnant moms was done by giving iron suplement minimum 90 tablets and were drunk every day in order that there was no hemorrhagic when they in partus period.

In the past, most people used herbal because of tradition or economy reasons, weren't able to pay the doctor's cost. One of herbal medicine was Gedi Leaf which was also called Yondok Vegetable. This plants has Latin name *Hibiscus manihot L*, the synonym of *Abelmoschus manihot*. Beside was known in Indonesia, Gedi leaf was also known in other countries, it's name was *kuway* in Philipine, *Po fai* in Thailand, and it's general name is *Edible hibiscus*. Gedi leaf became one of high iron source. (Mapanawang,A.L,2016)

One of herbal medicine which could increase hemoglobin degree was gedi leaf. According to Indah, et.al (2012), the chemical content in gedi leaf were calcium, iron, vitamine A, Vitamine B6, Flavonoid, and Vitamine C. The mineral content in Gedi leaf, according to Mapanawang, A.L (2016) could solve anemia (lack of iron) because in Gedi leaf contains minerals which could smooth the forming process of hemoglobin. From the past until recent time, there are many people in the rural area who believe that eating gedi leaf or drinking the

decoction of gedi leaf could increase the blood pressure or prevent anemia.

Based on the data, the researcher was interested to analyze the effect of consuming decoction of gedi leaf toward the increasing of hemoglobin at porturition moms with anemia.

RESEARCH METHOD

This research was experiment research with *pretest dan posttest control group design*, there were two groups. 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) was'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 pasca-experiment (experiment group) and group which wasn't given the experiment (control group). (Mapanawang, AL.2016).

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 6 porturition moms with anemia, who divided into experiment group of 3 respondents and at the control group of 3 respondents

RESULT AND DISCUSSION

This research was done in tiberias Maternity Hospital with the time of research started from 1 june – 1 July 2016. The main material which was used is the decoctain of gedi leaf, gedi leaf was boiled with 2 glasses of fresh water in 5 minutes then it was given to the porturition moms with anemia to be drunk 2 glasses, 1 glass in the morning and 1 glass in the night during 7 days.

Univariat analysis aimed to explain the characteristic of each research variable which processed by seeing the percentage. The characteristic of respondents at 19-29 years old was 4 persons (66,6%) and >30 years old was 2 persons (33,4%)

Bivariat analysis aimed to examine the corelation between 2 research variables that were independent and dependent variables. This was useful to prove the difference of hemoglobin degree in porturition moms with anemia before and after consuming the decoction of gedi leaf.

Table 1. Test results for the average difference in hemoglobin levels in the group of Experiments

Kadar Hemoglobin	**N**	**Mean**	**Standar Devisiasi**	**Min**	**Max**
Pre test	3	9,00	1,000	9	10
Post test	3	10,67	.577	10,5	11

Table 2. Test Results Statistics Group Experiments

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre test	9.00	3	1.000	.577
	Post test	10.67	3	.577	.333

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Pre_test - Post test	-1.667	1.555	.667	-4.535	1.202	-1.500	2	.002

From the difference test and Paired Sample T-test at the experiment group, it was obtained average value of hemoglobin degree before consuming the decoctain of gedi leaf was 9,0 gr% with deviation standard 1,000. The hemoglobin standard after consuming the decoction of gedi leaf was 10,67 gr% with deviation standard 0,577, and p value= 0,002 (p<0,05), so it was concluded that there was an effect of consuming the decoction of gedi leaf toward the hemoglobin increasing at portueition moms with anemia.

Table 3. Result of Different Test of Average the Hemoglobin Degree at Porturition Moms before and after Experiment at Control Group

Hemoglobin	N	Mean	Standard Devisiasi	Min	Max
Pre test	3	8,33	0,577	8,2	8,4
Post test	3	8,67	0,577	8,3	8,8

Table 4. Result of Statistics Test at Control Group

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_test	8.33	3	.577	.333
	Post_test	8.67	3	.577	.333

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Pre_test - Post_test	-.333	1.155	.667	-3.202	2.535	-.500	2	.667

Based on the result of difference test and statistics test with Paired Sample T-test at control group was obtained average value of Hemoglobin degree pretest at porturition moms was 8,33 gr% with deviation standard 0,577, posttest 8,67 gr% with deviation standard 0,577 with p value = 0,677 (p>0,05). So it was concluded that there was not effect of consuming the decoction of gedi leaf toward the hemoglobin increasing at porturition moms with anemia.

DISCUSSION

Consuming the decoction of Gedi leaf during 7 days at 2 respondents showed that there was increasing of hemoglobin degree. From pre-test data, the average value of hemoglobin degree at experiment group was 9,00 gr% and increasing into 10,67 gr%, it meant that there was an increasing of 1,6 gr%. This showed that there was an increasing of Hemoglobin. Hemoglobin degree of moms in the porturition period was stated normal if Hb degree > 10,5 gr%. Hemoglobin was formed in eritroblas and the continued in normoblastis stadium. Hemoglobin tied oxygen during the blood circullation prosess through lungs and then released oxygen to the tissue when the blood entered the capillary blood vessels. Hemoglobin was metalprotein which transported oxygen contained of iron in the blood of human being and animals. Hemoglobin molecule consisted of globin, apoprotein and four groups of heme, an organic molecule with one iron atom.

Checking up and controlling the hemoglobin could be done by using hb sahli tool, and the porturition moms who had Hb degree less than 10 gr% were suffered of anemia. Anemia at the porturition moms or lack of hemoglobin degree could cause more serius complication such as hemorrhagic in the porturition period, shock, and post partum infection. Serius anemia with Hb less than 4 gr% could cause decompensatio

cordis. Mostly, the low Hb degree was caused by consume style. For example, lack of nutrient or important elements such as iron, vitamine B12, vitamine B6, vitamine C, until folat acid. Moreover, it was the effect of hemorrhagic post partus, women in menstruation period or pregnant moms, and the others were caused by diseases or exception such as enteritis, gastrisis, chronical inflamed, and thallasemia.

Generally, they who got low Hb degree were pregnant moms who lack of meal or nutrient because of morning sickness or vormit and at the porturition moms it was caused by the hemorrhagic. One of vegetable which could increase hemoglobin degree was gedi leaf, the chemical content of gedi leaf were amino acid (triptofan, lisin), flavonoid, iron, vitamine A, vitamine B6, and vitamine C. mineral content in Gedi leaf could solve anemia suffer (lack of iron) because in the Gedi leaf contained minerals which could smooth the process of hemoglobin forming of iron. Mineral content such as Flavonoid, was anti inflamed content which could strenghtened blood capiler, and vitemine B6 was needed in he process of blood production.

Gedi leaf (Abelmuschus manihot, Jatropha Multifoda Euphorbiaceal) was kind of leaf which was become food in the form of vegetable by the people of mikrousia, among of them is Indonesia especially Indonesia in the East side such as North Sulawesi, Manado, Halmahera, North Maluku, and Papua create it as main vegetable in meal menu. (Mapanawang, L,Arend,2016)

Content/Component of Gedi Leaf according to Jeni,T,2010 were:

a. Alkaloid, was basic compound which could netralize acid in the body.
b. Tanin, was polifenol compound which could treat the inflamed.
c. Terpenoid, useful as antioxydant.
d. Saponin, functioned to add the delicious and as the natural food thickening.
e. Flavonoid, was element of anti inflamed which could strengthened blood capillary.
f. Polifenol, useful for the hearth health and protect from free radical.
g. Serotonin, as antidepressan vitamine A, beta karoten which were needed for eyes health and the growth and lender health at intestines.
h. Vitamin C, very useful in preventing the infection, bone forming, activating respiration cell, and blood vessel.
i. Vitamin B6, to form blood vessel, to optimalize the brain function, protein syntheses, and protein decomposition. Beside those functions, vitamine B6 also had important role in metabolism and amino acid.

Consuming the decoction of gedi leaf as vitamine c source could help increasing iron absorption, however, if the consume of vitamine c was low, could give implication toward hemoglobin degree of porturition moms. The content of high vitamine C in gedi leaf could be used by porturition moms to form blood vessel.

Based on the result research at the control group, it showed that average value of hemoglobin degree at pretest was 8,33 gr% and little bit increasing became 8,67 gr%. The increasing of this average value could be caused by the lack of consuming iron and vitamine C regularly and was only obtained from the food. According to Varney (2007), there were number of factors which cause anemia, such as economy status. The lower economy status cause poor nutrient rate became higher and cause deficiency anemia rate of iron became higher. Other causes such as food which less of nutrient, digestion problem and malabsorption, lack of iron in meal (lack of iron in diit), increasing of iron needs, lost of much blood during the partus process, menstruation, chronical disease such as lung TBC, intestines worm, and malaria.

CONCLUSSION

Generally, they who got low Hb degree were pregnant moms who lack of meal or nutrient because of morning sickness or vormit and at the porturition moms it was caused by the hemorrhagic. From the research result, could be concluded that gedi leaf with it's chemical content such as amino acid (triptofan, lisin), flavonoid, iron, vitamine A, vitamine B6, and vitamine C could solve anemia suffer (lack of iron). There was very significant increasing of Hemoglobin degree at porturition moms with anemia of the experiment group than Hb of moms at the control group. This was because in the Gedi leaf contained minerals which could smooth the process of hemoglobin forming of iron. Mineral content such as Flavonoid, was anti inflamed content which could strenghtened blood capiler, and vitemine B6 was needed in he process of blood production.

Some benefits of Gedi leaf such as, could strengthened fetus because containing folat acid, has special benefit to prevent abortus, inproving ASI production, decrease asidosis at pregnant moms, gedi

leaf and carrot mixing could be used to care teeth of pregnant moms, as the medicine for constipation, and as medicine for pregnant moms who suffered of anemia.

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