EFFECTIVENESS OF GREEN TEA FEEDING TO DECREASE CHOLESTEROLLIN HIPERCOLESTROL PATIENTS

Anik Supriani[1], Nur Chasanah[2], Henny Vidia Effendy[3]
Surya Mustika Sari,[4] Heppy Rina Mardiana[5] Tri Ayu Widiyaswari[6]

Dian Husada Institute of Health Science

Correspondence email : aniksupriani76@gmail.com

ABSTRACT	Keywords
Cholesterol disease is commonly suffered by obese people but did not rule out skinny people can also experience it. Green tea is one method in the management of cholesterol reduction in non-pharmacology. Green tea has the benefit of lowering cholesterol. The purpose of this research to analyze the effectiveness of green tea to decrease cholesterol. The design of this study used pre-experiment with one group pre-test posttest. The population of 32 respondents using non-probability sampling with total sampling technique. The variables of this study were cholesterol first performed cholesterol assessment, independent variables Effectiveness of green tea and dependent variable decreased cholesterol levels. The results before the green tea were given most of the high cholesterol as many as 20 respondents (62.5%), after being given a green tea for one week most of the cholesterol to 22 respondents (68.7%). The Wilcoxon statistic test obtained a significant value of 0.005 and showed that there was a considerable effect of green tea on cholesterol reduction. The conclusion from the researchers is there is a significant effect of the effectiveness of green tea on changes in cholesterol levels. Cholesterol treatment performed twice a day morning and night regularly for one week. This research can also be applied in nursing care on respondents who experienced cholesterol and as well as prevention efforts cholesterol	*Green tea, cholesterol*

.

INTRODUCTION

Cholesterol is a fatty substance in the blood that is needed by the body, especially the liver that functions to form cell walls and the formation of steroid hormones. Although needed by the body, if the cholesterol levels in the blood are too high and accompanied by free radicals in the body will cause LDL oxidation which eventually leads to atherosclerosis which can be at risk of coronary heart disease. At this time people are more interested in taking herbs. Herbal plants are one of the drugs with various chemicals contained in it that can be utilised for treatment by consuming the rules. One of the herbs that help in lowering cholesterol levels is green tea. Drinking tea periodically without sugar can reduce cholesterol in the body[1]. Facts in the Village Single Pager RT.01 RW.03 Pungging District is only a small percentage of people who know the benefits of green tea that can lower levels of cholesterol in the blood; cholesterol patients rely solely on medication purchased in pharmacies or herbal shops.

The American Heart Association (AHA) estimates that more than 100 million Americans have total cholesterol levels> 200 mg/dl which fall into the category of high enough, and more than 34 million adult Americans have cholesterol levels> 240 mg/therapy. Based on the data Pusdatin year 2013 in Indonesia the incidence of high cholesterol by 35.9%. According to the Household Health Survey 2014, the incidence of hypercholesterolemia in the 25-34-year age group is 9.3% and corresponds to an age of up to 15.5% in the 55-64 age group. Hypercholesterolemia is most commonly found in women (14.5%) than men (8.6%) [10]. SKRT in 2014 found a total prevalence of cholesterol> 200 mg/dl in Java - Bali for urban areas of 8.9% higher than rural 5.2% [1]. Based on a preliminary study conducted by researchers at RT 1 RW 3Desa

Single Pager on eight respondents with two glasses of green tea morning and night for one week. Five respondents had decreased cholesterol level, and three others remained.

Many factors that cause hypercholesterolemia are genetic factors, secondary factors caused by other diseases such as cholesterol, nephrotic syndrome and dietary factors of saturated fat, obesity and lack of exercise. High cholesterol levels in the blood have an important role in the process of atherosclerosis which will further lead to cardiovascular disorders. Of the many studies, Cohort shows that the higher the blood cholesterol level, the higher the incidence of cardiovascular events. Cholesterol can be lowered and prevented before moving into bad cholesterol in the body that can threaten the disease brought about because the cholesterol appears. The impact of increased cholesterol in the blood can lead to complications of diseases such as hypertension, diabetes mellitus, heart disease and stroke[3]. Green tea from existing theories can overcome cholesterol because it contains Catechin and theanine which is beneficial to lower cholesterol levels in the body. And theanine alone can increase good cholesterol and lower bad cholesterol levels.

Cholesterol can be lowered without having to use chemical drugs or medical drugs because many ways to prevent and lower cholesterol levels to stay under control. A substance contained in tea causes decrease in cholesterol levels is catechins where this substance helps the absorption of cholesterol in the intestine. However, keep in mind excessive consumption of tea can cause side effects of liver damage and should consume in a reasonable amount. Other non-medical treatments that can decrease cholesterol such as: quit smoking, avoid excessive alcohol consumption, exercise regularly, healthy

lifestyle with a diet low in saturated fat and cholesterol. And also increasing consumption of complex carbohydrates, vegetables and fruits,consumption of fibrous foods, fish oil containing omega-3 fatty acids and regularly perform routine checks [1].

The purpose of this study is to analyse the effectiveness of green tea to decrease cholesterol levels in hyper Cholesterol patients in tunggal pager village pungging district mojokerto regency.

MATERIALS AND METHODS

In this study, the author's used pre-experimental research design is a research design that is used to find the cause and effect relationship with the involvement of research in manipulating the independent variables (Nursalam, 2008). The type of analysis used is one group pretest-posttest design, which is experimental design by doing pre-test first before given intervention then after intervention did post-test.

The target population in this study is all respondents who suffer from cholesterol as much as 32 respondents. The large sample in this study as many as 32 respondents who suffer from cholesterol conducted check by researchers. Type of research used is one group pre-test post design, which is an experimental design by doing pre-test first before being given intervention then after being given intervention by giving a green tea for seven days done post-test that is a measurement of cholesterol return with cholesterol check tool.

The data collection of pre-test is done by measurement of cholesterol one by one at respondent in responder house respectively. In this research is to provide green tea. Giving green tea to respondents with green tea water brewing technique, the step with the researchers prepare green tea in a glass of 200 ccs warm water twice daily before breakfast and evening before bed. Post-test data collected by cholesterol measurement one by one to the respondent within seven days after giving green tea.

Data analysis using Wilcoxon test technique with significant level 0,05 using SPSS 16 for windows.

RESULTS

Distribution of Cholesterol Classification Before Given Green Tea

Table 1 Distribution of cholesterol frequency before giving green tea

No	Before	Frequency (n)	Percentage (%)
1	Medium	12	37.5
2	High	20	62.5
	Total	32	100.0

Table 1 shows that most cholesterol before green tea was given as high as 20 respondents (62.5%)

Distribution of Cholesterol Classification Before Given Green Tea

Table 2 Distribution of Cholesterol Frequency After green tea

No	After	Frequency (n)	Percentage (%)
1	Normal	10	31.3
2	Medium	22	68.7
	Total	32	100.0

Based on Table 2 shows that most of the cholesterol before giving green tea is quite as much as 22 respondents (68.7%)

Analyze the effectiveness of green tea to decrease cholesterol levels

Table 3. Cross-tabulation of green tea to reduce cholesterol levels

Cholesterol before	Cholesterol after				Total	
	Normal		Medium			
	F	%	F	%	F	%
Medium	8	80	2	10,0	10	100,0
High	2	20	20	90,0	22	100,0
Total	10	100	22	100	32	100,0

Based on the above table 3. it was found that cholesterol changes that can be seen after giving green tea to 20 respondents in high cholesterol 2 of them become normal and 22 become enough. From cholesterol enough, 12 respondents decreased to average as many as eight respondents and enough two respondents.

Ranks

		N	Mean Rank	Sum of Ranks
Cholesterol before - cholesterol after	Negative Ranks	19[a]	10.00	190.00
	Positive Ranks	0[b]	.00	.00
	Ties	2[c]		
	Total	21		

a. Cholesterol after <cholesterol before
b. Cholesterol after> Cholesterol before
c. Cholesterol after = Cholesterol before

Based on the results obtained Wilcoxon p = 0.000 <0.05, it means effective green tea to decrease cholesterol levels.

Discussion

Cholesterol levels before being given green tea

The results obtained before the green showed high cholesterol of 20 respondents (62.5%). High cholesterol is commonly suffered by obese people, but did not rule out thin people can also experience it, especially with eating foods that are low in fiber but high in fat. In addition to dietary factors, high cholesterol can also be caused by hereditary factors. Therefore, all the good people skinny let alone fat, have never suffered cholesterol let alone who have experienced it, need to keep food by reducing cholesterol levels (Nugraha, 2014).

According to the researchers, the cause of cholesterol in respondents is that the majority of respondents liked fried foods, offal, fatty foods such as Meatballs, Gule, Rawon, Soto, and lack of sleep in quantity and quality. Given the lifestyle that occurs, many alternative therapies for cholesterol disease, one of which is the provision of green tea that can use for management in lowering cholesterol. Also, cholesterol levels are also influenced by sex, where the sex of women after menopause LDL cholesterol levels in women tend to increase. In women increased cholesterol levels can occur at any age above 20 years. While in men cholesterol levels tend to increase if men have stepped on over 50 years. Other factors that influence smoking behavior can also increase cholesterol because cigarettes contain acrolein or harmful chemicals that can reduce levels of good cholesterol / HDL decreased HDL levels this can certainly cause high levels of LDL in the body that is very dangerous for all humans

Age is a natural risk factor. Age factor affects the health condition of a person; this happens because the older the ability of the working mechanism of parts of a person's organs will decrease. The longer the age of working organs, the more accumulate dirt, in this case, the cholesterol that accompanies the activity of these organs. This is by the opinion Faisal bars (1993) that at an increasingly old age, total cholesterol higher levels. This suggests that age can affect a person's total cholesterol level. At an older age, the total cholesterol level is relatively higher than the total cholesterol level at a young age; this is because the older the person's LDL receptor activity may decrease. These receptor cells act as cholesterol circulatory hemostasis in the blood and are present in the liver, gonadal glands, and adrenal glands. When these receptor cells are impaired cholesterol will increase in the blood circulation (Heslet, L, 1997)

According to the researchers showed the age of respondents over 40 years age range known at the age of 40 years and over the total cholesterol level is relatively higher due to the older an individual LDL activity is reduced. Factors affecting cholesterol levels of respondents in this study can be controlled because respondents belong to the same age group.

Also, work factor. As workers sometimes do heavy work at night. When you are sleep deprived, the appetite hormone will be produced in the body. Lack of sleep can stimulate the levels of ghrelin (hormones that increase appetite) to increase. Otherwise, leptin levels (hormones that signal that the body is full) will decrease it without realizing it can increase cholesterol levels (Januardi, 2013)

According to the researchers the occurrence of irregular sleep patterns due to the unusual work such as noon and at night. Fewer sleep patterns will make cholesterol in the blood up. In addition to increased cholesterol. There are certain people who still have high

cholesterol levels despite having a healthy and balanced lifestyle. Hereditary factors also play a role in the occurrence of excessive bad cholesterol (Intan 2013). Hereditary factors against diseases caused by cholesterol such as diabetes mellitus, heart, hypertension which can cause high cholesterol. Because with increased cholesterol can affect the cause of diseases such as diabetes mellitus, heart, hypertension.

Cholesterol levels after being given green tea

The results obtained, most of the cholesterol after being given green tea is enough is as much as 22 respondents (68.7%). Green tea is the name of tea made from tea plant leaves (Camellia sinensis) which is picked and undergoes a heating process to prevent oxidation, or it could also mean the beverages produced from brewing the tea leaves. The many catechin clusters contained in green tea in the form of epigallocatechin-3-gallate (EGCG) molecules may inhibit tumorigenesis of incision, promotional and progression (Eileen, 2011).

Cholesterol disease is the fat contained in the bloodstream or body cells that are needed for the formation of cell walls and some raw materials hormone. Therapy cholesterol disease divided into 2, Namely using a non-pharmacological treatment that is multiple physical exercise, fruit and vegetable consumption, Avoid food fat and herbal plant consumption (Green Tea).How to give green tea that is by way of green tea dye 200cc, two times a day for one week before breakfast and night. Green tea

content is polyphenols, and flavonol from the content can help inhibition of LDL content blood cholesterol, decreased cholesterol. Factors affecting cholesterol are routine checks, maintaining body balance, routine activities, consumption of fatty foods resulting in cholesterol levels in the blood.

According to researchers, this is about the effect of consuming green tea on cholesterol levels indicates that green tea lowers low-density lipoprotein (LDL) cholesterol, "bad" cholesterol levels. At the same time, green tea helps increase high-density lipoprotein (HDL) levels, which are considered "good." There are certain compounds in green tea that help inhibit the absorption of cholesterol in the digestive tract, while simultaneously assisting in the excretion process. Green tea also helps keep the arteries clean by preventing the oxidation of LDL, which can cause plaque buildup which results in increased risk of heart attack or stroke.

The effectiveness of green tea to decrease cholesterol levels

From the analysis, the test found that there is a change and based on the results obtained Wilcoxon $p = 0.000 < 0.05$, meaning that green tea is effective against the decrease in cholesterol levels.

Green tea can indeed lower cholesterol levels in our body. People who consume average green tea have a cholesterol level of 7.2 mg/dl lower than the comparison group. The cholesterol-lowering effect is caused by the young substances contained in green tea that

catechins help reduce the absorption of cholesterol in the gut. Thus helping to reduce the cholesterol problem high.selain you also must avoid foods that high cholesterol in addition to drinking green tea on a regular basis (Eileen, 2011)

According to researchers, cholesterol can be lowered without having to use chemical drugs or medical drugs because many ways to prevent and reduce cholesterol levels to stay under control. The decrease in cholesterol levels is caused by the substances contained in tea that is catechins (poliveno) l, flavonol. Catechins (polyvinyl) are substances to help absorption of cholesterol in the intestines, polyvinyl and flavonol also inhibit LDL cholesterol levels in the blood. Green tea contains polyphenols catechins are beneficial to increase energy expenditure in the body because it is warming the body (thermogenesis). Fats that are rapidly oxidized and insulin sensitivity help increase metabolism in the body. In addition to the regularity of tea consumption performed for seven days, the accuracy of tea doses may affect cholesterol changes.

CONCLUSIONS

Before giving green tea most cholesterol before it is high as many as 13 people (61,9%)
1. After giving green tea most cholesterol is enough is as much as 13 people (61.9%)
2. Based on the results obtained Wilcoxon test p = 0000 <0.05, meaning there is no effect on the effectiveness of green tea to decrease cholesterol levels in RT 1 RW 3 at Tunggal Pager Village Pungging district Mojokerto Regency

REFERENCES

Djohan 2013. *Benefits of Herbs* . Jakarta : Karya Ilmu

Eileen. 2011. *Green Tea For Health* . Jakarta: ISBN

Haryana. 2009. Signs of Cholesterol Disease Symptoms. http. www.info-sehat.com accessed 12th Desember 2015

Hidayat. 2009. *Methods of Nursing Research and Data Analysis Techniques,* Jakarta: Salemba Medika.

Health Department 2013. *Cholesterol measurement.* www.depkes.ri.ac.id. accessed 3rd january 2016

Ilham. 2012. *Danger of Bad Cholesterol.* Jakarta Rineka Cipta

Indrawati. 2014. *Non pharmacological therapy for cholesterol sufferers.* http//wwwherbal.com. Accessed 5th februari 2016

Indrayani. 2012. *How to prevent and Lower Cholesterol.* Jakarta ISBN

Indrayani. 2012. *Prevention and lowering cholesterol.* Bandung ALFABETA

Jen W, Ming T, Chi R, Wood, Yuh F. Green Tea Extract Ameliorates Learning and Memory Deficits in Ischemic Rats via its Active Compannt Polyphenol Epigallocatechin-3gallate by Modulation of Oxidative Stress and Neuroflamation. 2016 doi : 10.1155/2016/163106

Kemenkes. 2014. *Scope of Cholesterol.* http//www.kemenkes.ac.id accesses 13th January 2016

Nazir, Mohammad. 2013. *Research methods,* Bogor: Ghalia Indonesia.

Notoatmodjo, Soekidjo. 2013. *Education and Health Behavior*, Jakarta :PT Rineka Cipta

Nugraha 2014. *Cholesterol Danger.* Jakarta: EGCUniversity. Surabaya.