ORIGINAL ARTICLE

EFFECT OF POTENTIAL CONSUMPTION (POLYCHAETA) TO DECREASE OF TOTAL CHOLESTEROL CONDITION ON HYPERCOLESTEROLEMIA PATIENTS IN THE VILLAGE MAWEA TOBELO EAST DISTRICT NORTH HALMAHERA

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ABSTRACT

Cholesterol is a fat that is largely formed by the body itself, especially in the liver called endogenous, and about 30% is obtained from the food called kolestreol exogenous. Laor worm (Polychaeta) that consumed the community is actually the posterior Polychaeta organisms that contain egg and sperm. Has the content of Oleic Acid, Linoleic Acid, Linolenic Acid, EPA and DHA. How different breeds of laor developments with other animals, in the process of marriage both males as well as females releasing part of the anterior posteriornya. This research aims to know the influence of Consumption Laor (Polychaeta) against a decrease in Total cholesterol levels in people with Hiperkolesterolemia in the village of Mawea sub-district of North Halmahera Regency East Tobelo Year 2017. This type of research is research "Quasy Experiment Design With Pre-Post Test Control Group". with huge samples of 10 respondents in the village Mawea of sampling non probability sampling by means of consecutive types of sampling. Statistical tests using T-test with the significance of the values $\alpha = 0.028 < 0.05$. And the value T table $2,776 < 3,364$, then the zero hypothesis is rejected and the alternative hypothesis diterimah means there is influence consumption laor (Polychaeta) against a decrease in total cholesterol levels in people with hiperkolesterolemia. By consuming laor

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can lower cholesterol levels. It can be seen from the average cholesterol levels before and after consuming laor decline, before 323 mg/Dl after 182 mg/dL within an average of 141 mg/dL. It is recommended to always hiperkolesterolemia in people with cholesterol levels checked on a regular basis to the nearest health care places and always utilizing laor as anti cholesterol.

INTRODUCTION

Cholesterol is one part of fat, although cholesterol goes into the fat or lipid group, but both are different substances, one type of food may be high in fat but cholesterol-free and vice versa (1).

Cholesterol is a complex fat in every cell in the body. Cholesterol is classified as the first ingredient to form bile, cell walls, certain vitamins and hormones such as sex and others (2).

According to World Health Organization (WHO, 2015) data, hypercholesterolemia has caused the death toll to 2.6 million (4.5% of total deaths) (3). Quoted from International Journal Of Health Medicine And Curren Research; According to WHO (World Helth Organization, 2011), deaths were caused by cardiovascular disease, especially heart attacks (7.3 billion) and stroke (6.2%). One of the major risk factors for cardiovascular disease is high cholesterol (4). The highest prevalence of total cholesterol was European (54%) and American (48%). While the lowest prevalence is Africa (23%) and Southeast Asia (30%) (5). As many as 37% of deaths in Indonesia are due to hypercholesterolemia risk factors, of which 35.9% of people aged 15 and older have total cholesterol values above normal values (6).

Some provinces in Indonesia such as Nangroe Aceh, West Sumatra, Bangka Belitung and Riau Islands have a prevalence of increased cholesterol levels of ≥50% (7).

Data from the Health Office of North Maluku Province in 2016, reports of non-communicable diseases cases in patients recorded in hospitals or other health facilities in each city / district in North Maluku Province, showed the highest cases of patients with hypertension (9,306 people), then DM (1,634 people), CHD (97 people), and Stroke (75 people) (8).

Research conducted by lipid research clinics in the US found a similar correlation between total cholesterol levels and heart disease risk. The study found that every 1% reduction in total blood cholesterol levels, the risk of heart disease fell by 25%. The risk of heart disease increases when the total cholesterol level is greater than 200 mg / dl, and will increase three to five times when the levels above 300 mg / dl. (9).

The highest amount of fatty acid by type, obtained by type of fatty acid oleic C18, C16 fatty acid fatty acid, linoleic C18 fatty acid, stearic fatty acid, and arachidonic fatty acid at all treatments. The palmitic saturated fatty acids of all treatments are found in the highest composition compared to other types of fatty acids, indicating that palmitic fatty acids play a role in the formation of fat in marine worms (10).

Based on data from Puskesmas Mawea, East Tobelo Sub-district, North Halmahera Regency from January to March 2017, hypercholesterolemia sufferer is 29 people (Mawea Puskesmas Monthly Report Year 2017).

From the description of the above background, the authors are interested to conduct research entitled "The Effect of Laor Consumption (Polychaeta) Against The Total Cholesterol Decrease In Patients Of Hypercholesterolemia In Mawea Village East Tobelo Sub-district of North Halmahera Regency.

METHODS

This research is a quantitative treatment with Quasy Experiment Design Design With Pre-Post Test Control Group (25) design. This study intends to analyze the effect of laor consumption on Total cholesterol reduction, in patients with hypercholesterolemia in mawea village. The intervention group in this study were patients who will lower Total cholesterol, the sufferers of hypercholesterolaemia who ate laor. Before and after the intervention measurement of cholesterol levels. While the control group of respondents did not eat laor.

This study was conducted one-time pre-test for the two groups, then treated in the first group (experiment group) and in the second group (control group) was not treated. After that, another measurement (post test) is done in both groups. It aims to look at comparisons in the experimental group and the control group.

The research design is described as follows:

Pretest   Postest

F_1 ——————→ X ——————→ F_3

F_2 ——————————————————→ F_4
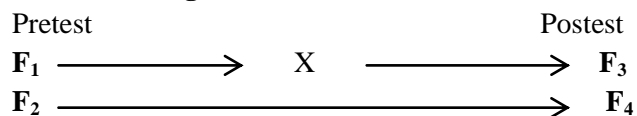
Information :

F_1 = Measurement of cholesterol before laor consumption in the intervention group (Experiment).

F_2 = Measurement of cholesterol levels in the control group.

X = Intervention of laor consumption.

F_3 = Results of measurement of cholesterol after laor consumption in the intervention group (experiment)

F_4 = Results of measurement of cholesterol levels in the control group.

The sample is part of a number of characteristics possessed by the population used for the study (24). In this research the sampling technique used is using non probability sampling method by using saturated sampling that is this sampling technique take all member of population become sample. This is done when the population is relatively small, less than 30 people, or research that wants to make generalizations with a very small error. Another term saturated sample is the census, in which all members of the population are sampled (26). So the number of samples used were 10 samples with sample division, 5 sample of intervention group and 5 samples for dick group.

METHODS

This research was conducted in Mawea Village, East Tobelo Subdistrict, North Kab.Halmahera. This location was chosen because it has the number of respondents who qualified for inclusion and has not done previous research.

Research time

Implementation of the study was conducted for 3 months starting from April june 2017.

Population

The population is the total number of subjects or objects that have certain characteristics and qualities set by the researcher to be examined and then drawn its conclusions (24). The population in this study were patients who did not get treatment of hypercholesterolemia will undergo a decrease in total cholesterol in patients with hypercholesterolaemia in Mawea Village, East Tobelo District. North Halmahera as many as 29 people.

Sample

The sample is part of a number of characteristics possessed by the population used for the study (24). In this research the sampling technique used is using non probability sampling method by using saturated sampling that is this sampling technique take all member of population become sample. This is done when the population is relatively small, less than 30 people, or research that wants to make generalizations with a very small error. Another term saturated sample is the census, in which all members of the population are sampled (26). So the number of samples used were 10 samples with sample division, 5 sample of intervention group and 5 samples for dick group.

RESULTS

This research was conducted in June 2017 with the number of respondents as many as 10 people who are community Mawea Village. This research uses quantitative research with Quasy Experiment Design Design With Pre-Post Test Control Group design. This study aims to obtain empirical evidence and correlation between laor consumption to decrease total cholesterol levels in patients with hypercholesterolemia in Mawea Village.

Respondents in the sex intervention group were 1 person and in the control group were 3 people while the men were in the intervention group as many as 4 people and in the control group 2 people. According to (28) cholesterol levels in the blood are always changing at all times, although these changes are not much different. Many factors that influence it mainly genetic factors, age, gender and environment. In addition, stress can also trigger increased cholesterol. Dietary changes also play a role in changes in cholesterol levels in the blood.

According to (29) in addition to functioning as an antioxidant, vitamin C has the effect of helping the hydroxylation reaction in the formation of bile acids thereby increasing the excretion of cholesterol. In addition (30) states vitamin B3 (niacin) serves to help metabolize the body's energy and play a role in fat metabolism to lower LDL cholesterol (Low Density Lopoprotein) and triglycerides and increase levels of HDL (High Density Lipoprotein) to reduce the disease of blood vessels and heart.

The effect of laor consumption for lowering total cholesterol in hypercholesterolemic patients because it contains Oleic Acid, Linoleic Acid, Linolenic Acid, EPA and DHA. This fact makes Cholesterol reduction a major goal in achieving better outcomes for patients who may be prone to experience the condition. Incorporating dietary supplements into the daily diet for those who have been diagnosed with high LDL levels, can provide significant healing. Evidence that laor can combat bad cholesterol (LDL) is overwhelming. By making laor as a healthy natural supplement daily, we

can protect ourselves from the effects of high levels of bad cholesterol in the blood.

Research conducted by Mapanawang et al about the influence of gedy leaf consumption on the decrease of cholesterol levels in it contain Oleic Acid compound. Oleic Acid compounds are also present in the Loar. When compared to consuming gedy leaves and consuming Laor then consuming laor more effectively to lower cholesterol because in Laor there are some compounds contained in it are: Oleic Acid compounds, Linoleic Acid, Linolenic Acid, EPA, and DHA. The compounds present in gedy leaves only lower cholesterol, while Laor's compounds are lowering cholesterol levels, helping fight heart disease, lowering blood cholesterol and the risk of coronary heart disease, contributing to brain tissue and nerves, besides Laor also has plenty of protein and also serves as an antibiotic.

The Lipid Research Clinics Primary Prevention published in 1984 showed that overall reductions in blood cholesterol have a direct and measurable effect on the number of new cases of heart disease and angina. In layman's terms, reducing cholesterol also reduces the likelihood of serious heart disease. In fact, reducing the bad cholesterol level by 25% can result in a reduction in heart attack, stroke and other cholesterol levels associated with the disease by 50%, 95% benefit and efficacy.

DISCUSSION

Total cholesterol level of hypercholesterolemia patients in the control group for Pre were: 202 mg / dL, 208 mg / dL, 214 mg / dL, 217 mg / dL, 207 mg / dL and for Post: 168 mg / dL, 197 mg / dL , 200 mg / dL, 201 mg / dL, 210 mg / dL.

This study intends to analyze the effect of laor consumption on Total cholesterol reduction, in patients with hypercholesterolemia in mawea village. The intervention group in this study were patients who will lower Total cholesterol, the sufferers of hypercholesterolaemia who ate laor. Before and after the intervention measurement of cholesterol levels. While the control group of respondents did not eat laor.

CONCLUSION

1. Total cholesterol level of hypercholesterolemia patients in the control group for Pre are: 202 mg / dL, 208 mg / dL, 214 mg / dL, 217 mg / dL, 207 mg / dL and for Post: 168 mg / dL, 197 mg / dL, 200 mg / dL, 201 mg / dL, 210 mg / dL.

2. Total cholesterol in patients with hypercholesterolaemia in the intervention group before consuming laor are: 323 mg / dL, 336 mg / dL, 298 mg / dL, 286 mg / dL, 297 mg / dL. Total cholesterol in patients with hypercholesterolemia in the intervention group after consuming laor are: 182 mg / dL, 301 mg / dL, 229 mg / dL, 243 mg / dL, 255 mg / dL.

3. The result of T-Test analysis shows that there is influence of laor consumption to decrease total cholesterol level in hypercholesterolemia patient with T value 3,364 (bigger than T value 2,776) with $\alpha = 0.028$. Then Ho rejected Ha accepted when $\alpha = 0.028$. In this study it is known that there is significant influence by consuming laor to decrease total cholesterol level in hypercholesterolemia patient.

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