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THE INFLUENCE OF BOTEME (SETARIA ITALICA) AGAINST A DECREASE IN THE LEVELS OF URIC ACID IN SUFFERERS GOUT ARTHRITIS IN THE VILLAGE OF GAMSUNGI SUB DISTRICT OF TOBELO NORTH HALMAHERA

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ABSTRACT

Gout Arthritis is a joint inflammation as a manifestation of the accumulation of crystalline deposits of monosodium urate, which are collected in the joints as a result of high levels of uric acid in the blood (Hyperuricemia). Boteme has a compound that is linoleic acid and vitamin C, linoleic acid serves as an anti-inflammatory, while vitamin C to inhibit uric acid reabsorption. The type of research used is quantitative research "quasy experiment design with Pre-post test control group" with the intention to know whether there is influence of Boteme consumption (Setaria Italica) to decrease levels of uric acid in patients with Gout Arthritis. The population in this study is 20 people. sampling is probability sampling by using saturated sampling where all members of the population are sampled. Data were taken through direct interviews with respondents and examination of uric acid levels. Then the data is tabulated and tested statistically using T test with significance level $\alpha = <0,05$. The results showed that botrim in experimental group had significant effect $p = 0,000$ with T-count $(7,165) > T$ -table $(2,262)$. And in the control group there is no effect with significant value $p = 0,960 > \alpha = 0,05$ with value of T-count $(0,51) > T$ -table

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(2,262), meaning Ho refused and Ha accepted. It is recommended in patients with uric acid to avoid food and lifestyle that is not good so avoid the disease gout arthritis. And can utilize herbal plants especially boteme as a drug gout arthritis.

INTRODUCTION

Gout disease (uric acid) is a disease associated with high levels of uric acid in the blood. According to WHO (World Health Organization) Indonesia is the 4th largest country in the world whose population suffers from gout and based on Natural Bulletin source, in Indonesia 35% uric acid disease occurs in males under 34 years old. Normal uric acid levels in men ranged from 3.5 to 7 mg / dL and in women 2.6-6 mg / dL. Abnormal uric acid levels are called hyperuricemia.

In the world the prevalence of gout disease has increased the number of patients to two-fold between 1990-2010. In adults in the United States gout disease increases and affects 8.3 million (4%) Americans. While the prevalence of hyperuricemia also increased and affected 43.3 million (21%) of adults in the United States. [1]

The result of basic health research (Riskesdas) in 2013 shows that joint disease in Indonesia based on the diagnosis and health of nakes is 11.9% and based on diagnosis and symptoms of 24.7%, while based on the highest nakes diagnosis area in Bali Province 19.3% and based on diagnosis and the highest symptoms are in East Nusa Tenggara by 31.1%. Prevalence of joint disease in Central Java in 2013 based on nakes diagnosis of 11.2% or based on diagnosis and symptoms of 25.5%. [1]

People in general still entrust their health affairs on herbal medicines that are considered relatively cheap and safe. This phenomenon is supported by the back to nature culture that is rampant today. No longer treatment in a practical way and a speedy recovery that takes into account the main, but further impact of selected treatment. Various chemical drugs have long-term effects that are less good for the body. This is one of the strongest reasons that the herbal medicines often use are also not always without side effects. [2]

One of herbal medicinal plants in North Halmahera Regency is Boteme / Jewawut (Setaria Italica). The official name of this plant in Indonesia (as contained in the Indonesian Big Dictionary) is the Millet. But also known as Jewawut or Juwawut.

Boteme ranks sixth as the most important grain and consumed one-third of the world's population. One of the main providers of energy, protein, vitamins and

minerals, rich in B vitamins, especially niacin, B6 and folacin are also essential amino acids such as isoleucine, leucine, phenylalanine and threonine and contain nitrilosida compounds that play a role inhibiting the development of cancer cells (anti-cancer) reduce the risk of heart disease (arteriosclerosis, heart attack, stroke and hypertension). [3]

It turns out that during this gout arthritis is still an unresolved problem seen from the incidence rate is still increasing. According to data taken at the Gosoma Puskesmas with the most gout arthritis in Gamsungi Village, Tobelo Sub-district, Halmahera Utara Regency, there were 30 populations with 20 samples according to the symptoms and diagnosis.

METHODS

This research is a quantitative research with quasi experimental design design with pre-post test control group. [19] This study aims to analyze the effect of Boteme (Setaria Italica) on the decrease of uric acid levels in patients with Gout Arthritis in Gamsungi Village, Tobelo Sub-district, North Halmahera District. The intervention group in this study were people with gout arthritis who would undergo a Boteme intervention procedure. In the intervention group there will be a procedure for giving Boteme.

Before and after intervention measurements of uric acid test were performed. While the control group will be measured Uric acid test and only given a health education that is knowledge of gout (Gout Arthritis) in Gamsungi Village.

Form the design as follows

	Pre test	Treatment	Post Test
Group Exp	01	X	03
Control Group	02		04

Information :

O1 = Measurements of uric acid levels prior to botrim intervention in the intervention group (experiment).

O2 = Measurements of uric acid levels before health education in the control group.

X = Intervention (Treatment) of boteme.

O3 = Measurements of uric acid levels after botrim intervention intervention (experiment).

O4 = Measurement results of uric acid levels after health education in the control group. [20]

RESULTS

Based on the data above showed in the experimental group after boteme treatment was measured using stastic test analysis (SPSS) with T test showed that botrim consumption had an effect on uric acid level in gout arthritis patient in Gamsungi village with $p = 0,000 < \alpha = 0,005$ with T-count (7,165) > T-table (2,262).

Respodents in this study were male sex in the experimental group of 5 people (50%) and in the control group of 8 men (80%) and women in the experimental group 5 people (50%) and the control group 2 people (20 %) This shows that most respondents are men. This is supported by Anis Komariah's research that men are more at risk of gout disease, whereas in women the percentage is smaller and only appears after menopause. Male uric acid levels tend to increase with age (puberty). In women, the increase starts from the time of menopause. Gout tends to be experienced by men, because in women have the hormone estrogen that helps urine acid removal through urine.

Respodents aged 30-55 years in the intervention group as many as 4 people (40%) and control group 8 people (80%). Furthermore, at age > 55 years in the experimental group that is as many as 5 people (50%) and control group 2 people (20%) at this age, gout disease occurs. Based on the above data, there is conformity with the theory that uric acid can be experienced by anyone and because of certain etiologic factors of uric acid disease often experienced by older ages, as for some factors that can cause uric acid such as age factor, gender, uncontrolled eating patterns, obesity, genetics.

In bivariate result, it can be seen that the difference in the experimental group on pre-test and post-test, ie at the time of measurement before consuming botemic acid above normal value after boteme consumption of uric acid level decreased.

This is in line with research conducted by Raisa (2015) in Gayaman village that there was a change in the experimental group before soursop juice administration and after administration there was an effect where uric acid level decreased with $p = 0.001$.

The results of this study also supported by Desi Sivilia and Mumpuni Dwiningtyas, 2016. With the Journal of the influence of pineapple juice consumption to decrease uric acid levels in elderly. In pineapple fruit have the same compound that is vitamin C in which the research there is influence to decrease uric acid level with value $p = 0,000 < \alpha = 0,005$. [23]

Boteme contain vitamin C that works by helping the kidney-related system to remove more uric acid. In

addition, it is also useful to keep purine from being produced into uric acid.

Another study according to Miftafu Darussalam and Dwi Kartika Rukmi with leaf salutary ingredients but containing vitamin C that can decrease uric acid levels of the study were tested with wilcoxon showed significancy value 0.009 ($p < 0.05$). [24]

Based on research from Rimah Hayah in Journal about the effect of extract of black cumin seeds in which there is linoleic acid content that can reduce the levels of uric acid so it can be said linolec acid compounds can reduce uric acid levels. [25]

While in the control group performed pre-test uric acid levels increased and after 1 week of research on measuring the return of uric acid levels. In this group is not given boteme just as a comparison so that the results obtained uric acid levels did not decrease even most of the increase. So it can be concluded that there is no effect on the decrease in uric acid levels with $p = 0.960 < \alpha = 0.05$ with a value of T-count 0.51 < T-table 2.262 means H_0 accepted and H_a rejected.

This is in line with research conducted by Charles (2016) in Kailupa village, North Loloda district, which states that there is no influence on the control group, with $p = 0.619 > \alpha = 0.05$ with a T-count 0.0510 < 2.160. This is because the control group is not given therapy only as a comparison only to see whether there is a difference between the experimental group and the control group.

CONCLUSION

From the results of the study it can be concluded that there is an effect of botard on the decrease of uric acid levels in Gamsungi Village Tobelo Sub-district of North Halmahera Regency and described below:

1. From the results of research on experimental groups before and after boteme administration there is a significant influence between before and after where there is a decrease in uric acid levels.
2. The level of uric acid in the control group or without the consumption of boteme is mostly increased, so it can be concluded that there is no influence on the control group.
3. The result of T test analysis shows the difference between the experimental group and the control group that is in the experimental group value $p = 0,000 < \alpha = 0.05$ with the value of T-count 7.165 > T-table 2.262 Therefore the null hypothesis (H_0)

rejected and Hypothesis alternative (H_a) is accepted. While in control group value $p = 0,960 > \alpha = 0,05$ with value of T-count $0,51 < T\text{-table } 2,262$ mean Hypothesis zero (H_0) accepted and alternative Hypothesis (H_a) rejected.

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