ORIGINAL ARTICLE

The Effect of Pineapple Consumption on Uric Acid Levels in Elderly at Panti Sosial Harapan Kita Palembang

Maya Fadlilah[1], Aristoteles[2], Trilia[1], Maratun Ulla[1], Sandeep Poddar[3]

[1] Nursing Diploma, Institut Ilmu Kesehatan dan Teknologi Muhammadiyah Palembang, Indonesia
[2] Medical Laboratory Technology Institut Ilmu Kesehatan dan Teknologi Muhammadiyah Palembang, Indonesia
[3] Lincoln University College, Wisma Lincoln, no. 12-18, SS6/12, Off Jalan Perbandaran, 47301 Petaling Jaya, Selangor D. E. Malaysia

ABSTRACT

Introduction: Uric acid is a purine metabolic waste that comes from the food scraps that we consume. Vitamin C in pineapple is very good for uric acid because vitamin C can help increase uric acid excretion through urine, also have ability to reduce uric acid levels in the body. To determine the effect of pineapple juice consumption on uric acid levels in the elderly person, this research was conducted at social institution in Palembang. **Methods:** This study was a pre-experimental study using a purposive sampling design. The sample technique used in this study was total sampling. Total sample was 13 respondents. The instrument used was a uric acid level test kit with Easy Touch / GCU. This research was conducted from 17-23 November 2020. **Results:** The results showed that the uric acid level before and after the consumption of pineapple juice, the average uric acid level before consumption was 7.8 mg / dl, the average uric acid level after consumption of pineapple juice 5.2 mg / dl based on the results of the Wilcoson sign test shows a value of p = 0.000 which means that there is an effect of pineapple juice consumption on uric acid levels. Consumption of pineapple juice is good for old people with arthritis gout; this is because pineapple is rich in vitamin C which can help remove uric acid from the body through urine. **Conclusion:** from above result it can be proved that there is an effect of consuming pineapple juice for 7 days on uric acid levels in the body.

Keywords: Elderly, Gout, Pineapple Juice

Corresponding Author:
Maya Fadlilah, M.Kes
Email: mayastikes@gmail.com
Tel: +6282281701148

INTRODUCTION

Uric acid is a purine metabolic waste product from the food we consume. Purines themselves are substances that are found in every food ingredient that comes from the body of living beings. When we eat these living things, the purine enters our bodies (1). Uric acid disease is commonly known as gout arthritis which is a disease in the form of crystals which is the end result of purine metabolism, which is one of the components of nucleic acid found in the nucleus of body cells. Development of older age will increase the risk of a person gout disease. Uric acid disease is not only caused by genetic factors or age factors. By taking healthy food with proper life style like avoiding smoking, exercise regularly, drinking lots of mineral water, a low-purine diet and eating fruits, vitamins, complex and simple carbohydrates, we can prevent this disease as well as can control the uric acid levels in the blood in a normal position (2).

Normal uric acid levels in women are 2.4-6.0 mg / dl and for men normal uric acid levels is 3.0-7.0 mg / dl. If it exceeds this value, a person is categorized as having hyperuresemia. Hyperuresimia is increase in uric acid levels in the blood that exceeds normal level (3).

The development of older age will increase the risk of gout, women are more prone to gout than men with a risk factor of 60%, this is because when women are menopausal the estrogen hormone decreases. As a result, only a little of the hormone estrogen helps discharge uric acid through urine in the body, so the disposal of uric acid levels is not controlled (2).

Decreasing uric acid levels, one of which can use pharmacological therapy and non-pharmacological therapy. Pharmacological therapy, mainly consists of consuming drugs, while non-pharmacological therapy is eating foods high in purines, increasing foods high in fiber, drinking more water, besides that it can also be consuming pineapple which has vitamin C, iron, phosphorus, calcium, sodium and bromelain minerals. Vitamin C in pineapple is very good for uric acid because vitamin C can help increase uric acid excretion

through urine, resulting in the reduced uric acid levels in the body (3).

Based on the data above, the researchers were interested in conducting a study to see the effect of pineapple juice consumption on acid levels.

MATERIALS AND METHODS

This research is a pre-experimental study using purposive sampling design. The sample technique used in this study was total sampling totaling to 13 respondents. The instrument used was a uric acid level test kit using Easy Touch / GCU. This research was conducted from 17-23 November 2020.

The research was carried out for 3 months from September to November 2020. The research data was collected for 7 days, namely 17s.d 23 November 2020. The populations in this study were the elderly who suffer from arthritis gout, amounting to 13 respondents. The sample in this study is the total population, namely the elderly who suffer from arthritis gout, amounting to 13 respondents. The sampling technique used was total sampling method (4).

The research study has been approved by research ethics committee Institut Ilmu Kesehatan dan Teknologi Muhammadiyah Palembang, Indonesia, no.792/A.I/IKESTMP/XII/2020 dated 1 December 2020

Data analysis used in this research is univariate analysis and bivariate analysis. Univariate analysis aims to obtain an overview of the frequency distribution of all research variables, both the independent variable and the dependent variable and aims to describe each variable. Bivariate analysis was performed to obtain the significance value of the relationship (correlation) between the independent variable and the dependent variable. The statistical test used was the T test with a confidence degree of 95% ($\alpha = 0.05$).

RESULTS

The research was conducted on 17-23 November 2020 at the Harapan Kita Elderly Social Home. Table I shows the average acid content value of the elderly before consuming the juice pineapple is 8.7 mg / dl and after consuming pineapple juice is 7.1 mg / dl.

Table II shows there was a significant different in the value of uric acid levels before consuming pineapple juice compared to after consuming pineapple juice (p value of 0.001).

DISCUSSION

Based on the Wilcoxon test results obtained from a total of 13 respondents, there was an average uric acid level before consuming pineapple juice 8.7 and an average uric acid level after giving pineapple juice 7.1 mg / dl with p value = 0.000.

Table I: Average uric acid levels before and after consuming pineapple juice

variable	minimum	maximum	mean
Average uric acid levels before consuming pinaeaple juice	6.9 mg/dl	17.5 mg/dl	8.7 mg/dl
Average uric acid levels after consuming pinaeaple juice	4.6 mg/dl	9.4 mg/dl	7.1 mg/dl

Table II: The effect of pineapple juice on uric acid levels

Variable	Mean	Std dev	P value
Average uric acid levels before consuming pinaeaple juice	8.7 mg/dl	2.925	0.001
Average uric acid levels after consuming pinaeaple juice	7.1 mg/dl	1.352	

Most of the people are unaware of the non-pharmacological therapy using pineapple juice and does not know the benefits of pineapple fruit, which is relatively cheap. The administration of pineapple juice aims to remove purine substances from the body which are wasted with urine, besides that it can improve kidney function to build up and remove uric acid substances produced by purines (5).

Based on the results of research conducted (6), there is an effect of pineapple juice consumption on uric acid levels in the elderly with a p value of 0.000. In line with the research (6), the average uric acid value before giving pineapple juice was 7.8 mg / dl after giving pineapple juice 5.9 mg / dl with a p value of 0.000 which means that there is an influence of pineapple juice on uric acid levels. There is research (7) which states that after giving pineapple juice the risk of getting uric acid decreases. Accordingly, certain antioxidants have been proposed to exert uric acid-lowering properties (8).

Based on this, the researchers argue that consumption of pineapple juice is very necessary for people with arthritis gout, this is because pineapple is rich in vitamin C which can help remove uric acid from the body through urine.

CONCLUSION

Based on the results of research and discussion, it was noted that the average uric acid level before consuming pineapple juice was 8.7 mg / dl and the average uric acid level after consuming pineapple juice for 7 days was 7.1 mg / dl. The Wilcoxon tests result showed a p value of 0.000, which means that there is an effect of consuming pineapple juice for 7 days on uric acid

levels in the body. Thus, from the above study it can be said that uric acid level is reduced in the body after consuming pineapple juice for 7 days.

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