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PINEAPPLE JUICE THERAPY REDUCES PAIN IN GOUT SUFFERERS

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ABSTRACT

Gout is caused by hyperuricemia, which is a condition of high levels of uric acid in the blood. If uric acid levels increase, rheumatic pain can occur in the joints, pain, tenderness, redness and swelling. Data from the DKI Jakarta health service in 2018 estimated that 47.83% of elderly people suffered from gout, while in the South Tangerang area it was 6.38%. The aim of this case study is to describe the application of pineapple juice therapy to reduce pain in gout sufferers. This case study research method uses a qualitative descriptive method. Data collection used was interviews, physical examination and observation. The research subjects were 5 people who were given therapy for 5 - 7 days. When applying pineapple juice therapy, the results were a significant reduction in the pain scale and uric acid levels. Before administering therapy, the pain scale results were 7-8 and the uric acid levels were 8.9 mg/dl - 10.2 mg/dL. After giving therapy, the results showed a decrease in the pain scale between pain scale 1 and pain scale 2 as well as uric acid levels with results of 6.2 mg/dl - 6.8 mg/dL. It can be concluded that giving pineapple juice therapy is effective in reducing pain and reducing uric acid if respondents maintain a diet such as not consuming foods high in purine, and drinking water as needed.

Keywords: gout; pain; pineapple juice therapy

INTRODUCTION

Gout is caused by hyperuricemia, which is a condition of high levels of uric acid in the blood. This condition is commonly found in the elderly due to slow body metabolism and gout is the second most common health problem for the elderly in Indonesia (Ria et al., 2021). Risk factors that cause people to suffer from gout are genetics/family history, excessive intake of purine compounds, excessive alcohol consumption, obesity, hypertension, impaired kidney function and certain medications (especially diuretics). Gout is a disease that can be controlled although it cannot be cured, but if left untreated this condition can develop into crippling arthritis. (Simamora & Saragih, 2018). The results of the Riskesdas show that the prevalence of gout in Indonesia has increased. In 2018 there were 7.3% of gout cases in the joint disease group. Data from the DKI Jakarta Health Service in 2018 estimated that 47.83% of the elderly suffered from gout, while in the South Tangerang area it was 6.38%. (Sudinkes DKI Jakarta, 2018).

One way to reduce uric acid levels is by using non-pharmacological therapy. by preventing foods high in purines, increasing water intake, and consuming pineapple which contains vitamin C and bromelain. Vitamin C can help increase the excretion (disposal) of uric acid through urine, while bromelain can help accelerate the healing of surgical wounds and swelling and joint pain, bromelain content can also inhibit proteins that cause increased uric acid levels in the body. (Susanto, 2013). According to research (Indria Putri Utina, 2023) entitled "The Effect of Giving Pineapple Fruit on Uric Acid Levels in Batulubang Village, South Lembeh", giving pineapple juice therapy can reduce uric acid levels with a value = 0.003 ($p < 0.05$). According to research (Rahma Suci Safitri, Alfika Safitri, M. Hasan Basri, and Rina Puspita Sari) entitled "Family Nursing Care in the Elderly Development Stage by Providing Pineapple Juice to Reduce Uric Acid Levels in Mrs. Y", pineapple juice therapy can reduce uric acid levels with results of 6.1 mg/dl.

METHOD

This type of research is qualitative research with a case study approach model. The research design used is a case study, namely in-depth research on one case and producing conclusions that are limited to the case that has been studied by the author. (Aziz Alimul Hidayat, 2021). This study describes the Application of Pineapple Juice Therapy to Reduce Pain in Gout Patients in the RW 01 Pondok Ranji area, South Tangerang. The research subjects were gout sufferers with complaints of joint pain, totaling 5 men and women with an age range of 54-64 years. This pineapple juice therapy was given for 5-7 days in the amount of 250cc. Before being given pineapple juice, respondents underwent pain assessment and uric acid level examination. On the last day, pain scale measurement evaluation and uric acid examination were carried out again.

RESULT AND DISCUSSION

First Respondent

Name Mrs. Z, age 54 years, female, housewife. The patient said that her right leg in the knee had pain like aches and stiffness since 1 week ago. The pain occurs sometimes and the pain does not spread, only focuses on one point. If pain occurs, Mrs. Z does not treat the pain and continues to do activities as usual. During March, the patient said that she often consumed foods high in purine such as anchovies, mackerel, yeast, shrimp, meat broth, and red meat. The patient knows that her illness is due to increased uric acid levels. The patient said that there is also someone in the family who suffers from gout, namely her mother. The results of the physical examination of Mrs. Z showed vital signs of Blood pressure: 130/80 mmHg, Pulse: 75 x / minute, Rr: 20 x / minute, Temperature 36.7 ° C, CRT <2 seconds, Weight: 74 kg, Height: 150 cm, BMI: 32.8 (Obesity), Lila: 25, upper and lower extremity muscle strength, good, no lesions or signs of infection. The first day of action was carried out starting March 20, 2023 according to the plan that had been prepared. At 07.00 WIB the researcher checked uric acid before being given pineapple juice therapy with a result of 8.2 mg / dL and conducted a pain assessment with the results of pain in the right knee, pain occurs occasionally and does not spread with a pain scale of 7. On the fifth day, the uric acid test results dropped to 6.8 mg/dl with a decrease in the pain scale to 2. In addition to consuming pineapple juice every morning, the patient also complied with reducing low-purine foods.

Second Respondent

Name Mrs. Y, 56 years old, female, occupation trader with complaints felt in both feet from the toes to the knees, pain like cramps and stiffness. The pain occurs at any time both during activities and when not active and focuses on one point only, if pain occurs the patient only rests, and sometimes takes allopurinol. The patient knows her illness is due to increased uric acid. The patient said her father also suffers from gout. . During March, the patient often consumes foods high in purines such as liver, tuna, anchovies, mackerel, duck meat, yeast, shrimp, shellfish, fish eggs, red meat, melinjo seeds, and peanuts. The results of physical examination on Mrs. Y showed vital signs of Blood pressure: 137/82 mmHg, Pulse: 70 x / minute, Rr: 20 x / minute, Temperature 36.5 ° C, CRT <2 seconds, Weight: 80 kg, Height: 159 cm, BMI: 31.64 (Obesity), Lila: 30, upper and lower extremity muscle strength is good, no lesions or signs of infection. On the first day a uric acid examination was carried out with the results of 10.2 mg / dl with complaints of pain in both feet from the toes to the knees, pain like cramps and stiffness, pain occurs at any time both during activity and inactivity and does not spread only focuses on one point with a pain scale: 8. On the 3rd day there was a decrease in pain complaints with a scale of 6 and a decrease in uric acid levels

with results of 8.2 mg / dl. On the fifth day, the patient said that she had severe pain in both feet from the toes to the knees, the pain was like cramps and stiffness, the pain occurred at any time, both during activity and inactivity, and did not spread, only focused on one point with a pain scale of 8 and the patient said that she consumed high-purine foods such as peanuts, red meat, shrimp, and shellfish because of a family event and did not take medication. The results of the uric acid examination were 12.3 mg/dL. On the seventh day, the results showed a decrease in pain complaints to a scale of 6 with a uric acid result of 9.7 mg/dL. The patient said that she had reduced high-purine foods.

Third Respondent

Name Mrs. S, age 62 years, female, housewife with complaints of pain in the left leg from the knee to the toes, pain like aches occurs sometimes and focuses on one point only, if pain occurs the patient applies it with a warmer. The patient said her father also suffered from gout. During March the patient consumed foods high in purine such as mackerel, duck meat, anchovies, yeast, shrimp, shellfish, meat broth, red meat and melinjo seeds. The results of physical examination on Mrs. S obtained vital signs Blood pressure: 140/70 mmHg, Pulse: 84 x / minute, Rr: 20 x / minute, Temperature 36.6 ° C, CRT <2 seconds, Weight: 56 kg, Height: 148 cm, BMI: 25.56 (Over weight), Lila: 20, upper and lower extremity muscle strength is good, no lesions or signs of infection. On the first day, a uric acid examination was carried out with the results of 8.4 mg/dL, with complaints of the left leg from the knee to the toes, pain occurs sometimes and focuses on one point only with a pain scale of 7. On days 2, 3, 4 there was a significant decrease between complaints of pain and also the results of uric acid levels after being given pineapple juice every day. On the 5th day there was a decrease in complaints of pain to a scale of 1 and the results of uric acid to 6.3 mg/dl.

Fourth Respondent

Name Mr. S, age 67 years, male gender, occupation trader with complaints of pain in both legs in the knee area such as stiffness and tingling, pain occurs sometimes and focuses on one point only. If pain occurs, the patient is given a warmer. The patient knows that his complaints are due to increased uric acid, because he often eats melinjo. According to the patient, during February and March he often consumes foods high in purines such as liver, anchovies, mackerel, duck meat, yeast, red meat and melinjo seeds. The patient said that no one in the family suffered from gout.
The results of a physical examination of Mr. S showed vital signs of Blood pressure: 150//79 mmHg, Pulse: 82 x/minute, Rr: 20 x/minute, Temperature 36.8 °C, CRT <2 seconds, Weight: 76 kg, Height: 171 cm, BMI: 29.58 (Obesity), Lila: 27, upper and lower extremity muscle strength is good, no lesions or signs of infection. On the first day, a pain scale assessment was carried out with a pain scale result of 7 and a uric acid level examination result of 8.9 mg/dl. After being given pineapple juice therapy for 5 days, the uric acid level results decreased to 7.2 mg/dl with a decrease in the pain scale to 2. While consuming pineapple juice, the patient said that he had reduced foods that contain high purines.

Fifth Respondent

Name Mrs. Sa, age 63 years, female, occupation RT administrator Complaints felt pain in both feet from the toes, ankles to the knees, pain occurs sometimes, the pain felt like tingling and sore, pain only focuses on one point, if pain occurs the patient does nothing but just ignores it. During February and March the patient often consumes foods high in purine such as anchovies, mackerel, yeast, shrimp, shellfish, red meat, meat broth, melinjo seeds, cashew nuts and peanuts. No one in

the family suffers from gout. The results of physical examination on Mrs. Sa obtained vital signs of Blood pressure: 165//87 mmHg, Pulse: 71 x / minute, Rr: 20 x / minute, Temperature 36.5 ° C, CRT <2 seconds, Weight: 54 kg, Height: 148 cm, BMI: 23.47 (Over weight), Lila: 25, upper and lower extremity muscle strength is good, there are no lesions or signs of infection. On the first day, a pain assessment was carried out with complaints of pain in both feet from the toes, ankles to the knees, pain occurs sometimes, the pain felt like tingling and sore, pain only focuses on one point with a pain scale of 8 and uric acid examination results of 7.8 mg / dl. On the 5th day, the patient said the pain was getting stronger in the right knee, the pain occurred every time from Asr prayer until when he wanted to sleep and did not spread with a pain scale of 7, with a uric acid result of 10.7 mg/dl. The patient said he ate salted fish, shrimp, duck meat, and shellfish. On the 7th day, the patient complained of increasingly strong pain with a scale of 8 and a uric acid result of 11.5 mg/dl.

Uric acid is the end product of purine catabolism. Uric acid is synthesized mainly in the liver, in a reaction catalyzed by the enzyme Xanthine oxidase. Humans do not have the enzyme Peroxisome uricase (urate oxidase), which plays a role in the breakdown of uric acid into allantoin, so that the uric acid formed will be excreted through the urinary tract in the form of urine. Increased uric acid levels that exceed normal levels are called hyperuricemia. Obese individuals will experience an increased risk of uric acid, because they have a high amount of protein in their bodies. The factors causing gout in this study were genetic factors, obesity and poor diet, namely frequent consumption of foods high in purines such as red meat, nuts, offal, mackerel, shellfish, anchovies and melinjo. Increased purine levels that exceed normal limits will accumulate uric acid crystals, causing joint inflammation or commonly known as gout. The causal factors in this study are in accordance with Kartikawati's theory (2019) which states that risk factors for gout are heredity, obesity and a diet high in purine.

The signs and symptoms of gout according to Kartikawati (2019) are tingling, aches, stiffness, swelling, redness, heat, feeling unwell, shivering and joints affected by gout look swollen. This theory is in accordance with the signs and symptoms found in 5 respondents, namely: tingling, aches, stiffness, cramps, aches in the joints, redness and sometimes accompanied by feeling unwell. Cytokines are proteins that affect other immune cells to protect the body from infection. When uric acid crystals accumulate, they will trigger the human immune cells to release cytokines. This condition also affects the cycle of joint inflammation that continues, creating acute pain and fever. The results of this study showed an increase in uric acid in the 2 respondents, namely Mrs. Sa on the first day the uric acid result was 7.8 mg / dl on the 7th day the result became 11.5 mg / dl and Mrs. Y, on the first day the uric acid result was 9.7 mg / dl and on the 5th day it became 12.3 mg / dl. This factor is caused by the patient's non-compliance in not consuming foods that contain a lot of purines such as nuts, duck meat, anchovies, shellfish, shrimp, anchovies and tuna. This is supported by research by Indria Putri Utina (2023) which stated that 1 subject experienced an increase in uric acid levels after an intervention for 3 days caused by bad habits or lifestyles such as consuming foods high in purines. Research conducted by Henny Mustika Santi (2019) pineapple juice can make the body fresher and not feel joint pain in the feet and hands. This is in accordance with the results of a study on 4 respondents who obtained the results of the study, there was a decrease in the pain scale until the patient did not feel any pain complaints, namely on a scale of 1 where in Mrs. Z previously the pain scale was from 7 to 2, Mrs. Y the pain scale was from 8 to 4, Mrs. S the pain scale was from 7 to 1, and Mr. S the pain scale was from 7 to 2.

Research conducted by Rahma Suci Safitri, Alfika Safitri, M. Hasan Basri, and Rina Puspita Sari (2023) stated that giving pineapple juice has been proven to have an effect on reducing uric acid levels in the blood and the importance of regulating diet and maintaining a clean and healthy lifestyle before being given pineapple juice therapy with results of 8.2 mg/dL after being given pineapple juice therapy 6.1 mg/dL for 5 days of pineapple juice therapy. This is in accordance with the results of a study on 3 respondents in Mrs. Z, namely experiencing a decrease in uric acid results from 8.2 mg/dL to 6.8 mg/dL. In Mrs. S, uric acid results from 8.4 mg/dL to 6.3 mg/dL. And in Mr. S, uric acid results from 8.9 mg/dL to 7.2 mg/dL. In Mrs. Y and Mrs. Sa, there was a gap in the decrease in uric acid after 7 days of pineapple juice therapy in Mrs. Y, the uric acid results from 10.2 mg/dL to 9.7 mg/dL, even Mrs. Sa's uric acid did not decrease with uric acid results from 7.8 mg/dL to 11.5 mg/dL. This factor was caused by Mrs. Sa not being able to maintain a diet by consuming excessive high-purine foods during the study. The researcher's solution was to always remind respondents not to consume high-purine foods, but Mrs. Sa had difficulty maintaining a diet so that the uric acid levels increased and the pain complaints did not decrease.

CONCLUSION

Based on the results of a case study with interviews, assessments and observations aimed at describing the application of pineapple juice therapy to reduce pain in gout sufferers carried out in RW 01 Pondok Ranji, South Tangerang for 5-7 days, it can be concluded that before the therapy was given, the results of the severe pain scale (7-8) and uric acid levels with results of 8.9 mg/dL - 10.2 mg/dL. Meanwhile, after the therapy, the results of the mild pain scale (1-2) and uric acid levels were 6.2 mg/dL-7.8 mg/dL. Of the 5 respondents, 1 respondent was unsuccessful in applying this pineapple juice therapy because the patient was still following an unhealthy diet or foods that were high in purine. Based on the application of pineapple juice therapy for gout sufferers, it is very effective in lowering uric acid levels and reducing pain if the patient applies a healthy diet, reduces foods that are high in purine and drinks water as needed.

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