



Application Of Soursop Leaf Decoction In Lowering Uric Acid Levels In *People With Gout Arthritis*

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Gout arthritis is a non-communicable disease characterized by increased uric acid levels in the blood due to impaired purine metabolism. This condition can cause pain, inflammation, and limited mobility, disrupting daily activities. In addition to pharmacological therapy, safe and easy-to-implement non-pharmacological alternatives are needed, one of which is the use of soursop leaf decoction. Soursop leaves are known to contain flavonoids and other bioactive compounds that act as antioxidants and can inhibit the activity of the xanthine oxidase enzyme. This study aims to describe the application of soursop leaf decoction in reducing uric acid levels in gout arthritis patients in the working area of the Bato Community Health Center (UPTD), Lueng Bata District, Banda Aceh City. The study used a descriptive method with a case study approach on two respondents with gout arthritis. The intervention involved administering 10 soursop leaves in 600 ml of water, boiled until 200 ml remained, once daily for seven days. Uric acid levels were measured before and after the intervention. The results of the case study showed a decrease in uric acid levels in both respondents after receiving the soursop leaf decoction therapy for seven days. The decrease in respondent I was from 7.3 mg/dl to 4.9 mg/dl, while in respondent II it was from 8.8 mg/dl to 5.3 mg/dl. Furthermore, the respondents also reported a decrease in joint pain and increased comfort during activities.

Keywords: *Gout (gouty arthritis), soursop leaf decoction.*

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Introduction

Gout or guot arthritis is a disease that is the end product of purine metabolism, with high purines in the body can cause pain in the joints where a diet high in purines can cause an increase in uric acid levels (Nuari et al., 2021). Gout is the final result of the breakdown of purine substances in the body. Purines themselves are natural compounds found in body cells and also in various types of food, such as offal, red meat, seafood, nuts, and alcoholic beverages. Under normal conditions, uric acid will dissolve in the blood and be excreted through the kidneys along with urine. However, when uric acid production is too high or its excretion by the kidneys is disrupted, then uric acid levels in the blood increase (called hyperuricemia). If uric acid levels are too high, uric acid crystals can settle in the joints and surrounding tissues, causing pain, swelling, and inflammation known as gout or gout arthritis (prayogi, 2019).

The World Health Organization (WHO) in 2023 gout (*gout athritis*) is included in the group of non-communicable diseases whose prevalence increases globally every year. The WHO notes that these increases are closely related to a diet high in purines, obesity, hypertension, and metabolic syndrome.

Globally, the prevalence of *gout arthritis* in the world ranges from 1% to 4% of the adult population, with a tendency to increase especially in developing countries due to lifestyle changes and fast food consumption. The WHO also emphasizes that the prevalence of *gout*

Soursop leaves are one of the plants that can be used as a treatment for leafy gout which has many benefits to cure diseases. Soursop leaves contain *acetogen* compounds and phenolic compounds that contain *alkaloids* and flavonoids 3 which have bioactivity as drugs that can reduce uric acid levels. *Flavonoids* in soursop leaves are compounds that have a high antioxidant content, which is useful for preventing the formation of uric acid in the blood and antioxidants that function to slow down the work of the *enzyme xhantine oxidase* which plays a role in the conversion of *hypoxhantine* to *xhantine*. The content of soursop leaves is also compounds that contain fructose, calcium, iron, vitamin A, Vitamin B, phosphorus (Retnaningsih and Amalia, 2023).

Related research conducted by Sulistiyowati, R., Agny K. (2023) The average value of the

arthritis is even higher, estimated to reach up to 10–20% of the adult population in some regions of Asia and the Pacific (WHO, 2022).

In Indonesia, data from **Riskesdas (Ministry of Health of the Republic of Indonesia, 2018)** shows that the prevalence of joint diseases that include *gout arthritis* is **24.7%** based on diagnosis and symptoms. This figure is higher than the global average, showing that gout is one of the main health problems in Indonesian society.

The period of gout prevalence from Aceh (2019) states that from year to year gout cases continue to occur, it can be seen that from 2013 of 7.5% increased to 7.9% in 2014. The characteristics of gout in the family group were highest at the age of 25 to 50 years (16.5%), living in rural areas (11.4%).

The production of uric acid in the body increases due to consuming foods with high levels of purines. Food sources that are often consumed by people with high levels of purine such as meat, offal, spinach, nuts, kale, shellfish, cauliflower, chickpeas, and crabs. This situation will make the metabolism of the food become the formation of uric acid which will eventually make high levels of uric acid in the blood (Nursoleha et al., 2019).

Treatment carried out to reduce uric acid levels can be done pharmacologically and non-pharmacally. Pharmacological treatment is the administration of *alluporinol* drugs and non-steroidal anti-inflammatory drugs, while non-pharmacological treatment is natural therapy or herbal therapy such as warm water foot compress therapy, ginger decoction, relaxation massage therapy and soursop water decoction (Wirahwadi, 2017).

difference between uric acid levels before and after being given soursop leaf decoction water was 0.66429 ± 0.72707 mg/dL. There was a significant difference in uric acid levels before and after being given soursop leaf decoction ($p < 0.05$).

Based on the results of an initial survey on September 23, 2025 at the Batoh health center, it was found that in the last 3 months there were 90 people suffering from gout, dominated by middle-aged adults (>35 years) and dominated by women.

Respondent I with the initials Mrs. T, female, age 36 years, Islamic religion, Acehese tribe, address of Gampong Cot mosque, last high school education, language spoken in Indonesian, work of housewife, marital status of Marriage, with a history of gout for the last 1 year and 2 months with uric acid levels of 7.3 mg/dl,

vital signs TD:130/80 mmHg N:82 x/m RR: 21 x/m T: 36.6°C BB: 58 kg TB: 156 cm. The main complaint is pain in the right leg and fingers and wrists.

Respondent II has the initials Mrs. K, female, age 38 years, marital status, Islamic religion, Indonesian ethnicity, address Gampong Cot Mesjid, last high school education, housewife, language used in Indonesian, with a history of gout for the last 1 year and 4 months with uric acid levels of 8.8 mg/dl, vital signs TD:120/80 mmhg N:86x/m RR: 20x/min T: 37, 4°C BB: 72 kg TB: 155 cm. Respondents said that each uric acid rose in the knee, right leg and joints felt numbness and pain.

Based on this phenomenon, the author is interested in conducting a research with the title "The Application of Soursop Leaf Decoction in Reducing Gout Arthritis Levels in *Gout Arthritis Patients* in the Working Area of UPTD Bato Health Center, Lueng Bata District, Banda Aceh City"

Method

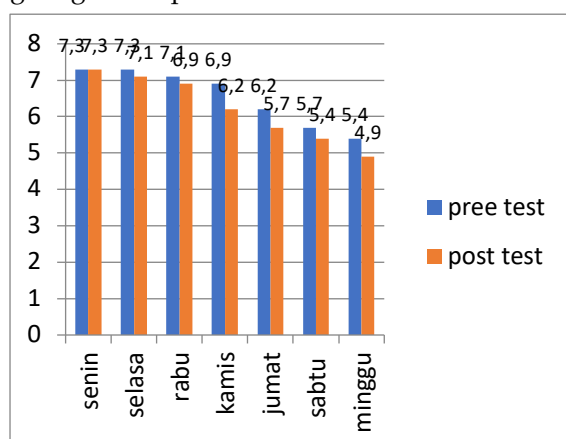
The research design method used in descriptive research using the case study approach Descriptive research is a research method that is carried out with the main objective of making an objective picture of a situation. Descriptive research methods are used to solve or answer problems that are being faced in the current situation (Suryono, 2019). This study is a response with gout in the UPTD Working Area of the Bato Health Center, Lueng Bata District, Banda Aceh City. This case study illustrates a decrease in uric acid levels in the administration of soursop leaf decoction therapy.

Result

Based on the results of the study, it is known that before and after the administration of soursop leaf decoction, the results of uric acid levels in respondents I and II respondents decreased which can be seen in the following diagram:

Diagram 4.1 :

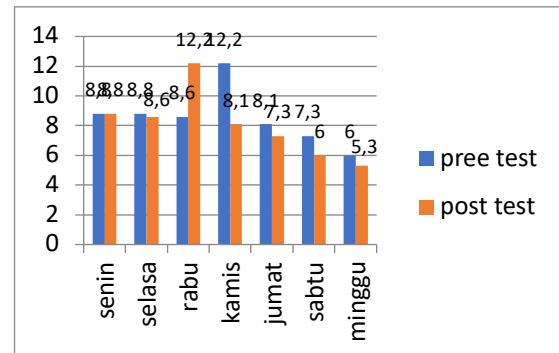
Uric acid levels of respondent I before and after giving soursop leaf decoction



Based on Diagram 4.1, it can be seen that the uric acid level of respondent I before the administration of soursop leaf decoction was 7.3 mg/dl and after being given a soursop leaf decoction for 7 consecutive days, there was a decrease in uric acid levels to 4.9 mg/dl.

Diagram 4.2

Uric acid levels of respondent II before and after the administration of soursop leaf decoction



Based on diagram 4.2, it can be seen that the uric acid level of respondent II before the administration of soursop leaf decoction was 8.8 mg/dl and after being given a soursop leaf decoction for 7 consecutive days there was a decrease in uric acid levels to 5.3 mg/dl.

Discussion

Based on the results of the study, it was found that the application of soursop leaf decoction could reduce uric acid levels in both respondents with a change in uric acid levels in respondent I from 7.3 mg/dl to 4.9 mg/dl.

This can also be proven by research conducted by Wijaya (2018), giving soursop leaf decoction for 7 days in reducing uric acid levels is an activity that can be done by every gout sufferer with the aim of reducing gout symptoms such as joint pain, stiffness in the legs and hands, feeling again.

The factors that support the success of the application of soursop leaf decoction in reducing uric acid levels in people with gout include: the intensity of therapy, compliance or correct administration, and family support.

Based on the intensity of therapy, in both respondents it was found that the intervention was given 7 times in the morning for 7 consecutive days with results in respondent I with a reduction of 4.9 mg/dl and respondent II with a reduction of 5.3 mg/dl. The more often the application of soursop leaf decoction is given, the higher the level of effectiveness in reducing uric acid levels in gout sufferers. According to the

researchers' assumptions, the intensity of giving soursop leaf decoction therapy carried out to gout patients with gout with proper and correct implementation will have a great effect on the reduction of uric acid levels.

This can also be proven by research conducted by Wijaya (2018), giving soursop leaf decoction for 7 days in reducing uric acid levels is an activity that can be done by every gout sufferer with the aim of reducing gout symptoms such as joint pain, stiffness in the legs and hands, feeling again.

Based on compliance or correct in providing soursop leaf decoction therapy in reducing uric acid levels in both respondents. Both respondents always applied the therapy given by the researcher in conducting an intervention for 7 days in the morning. From the results obtained in both respondents, there was a decrease in uric acid levels with satisfactory results. According to the researchers' assumptions, compliance or correctness in administering soursop leaf decoction therapy has an effect, especially on gout sufferers. In the results obtained, both respondents experienced a change in the value of uric acid levels because the patient could comply with the rules of therapy given by the researcher.

This is evidenced by Kanander's (2019) research, the administration of soursop leaf decoction therapy in the right way and with a predetermined dose or according to the instructions given can reduce the value of uric acid levels after therapy is given.

Based on family support in both respondents, they showed that soursop leaf decoction therapy was given before being given. Family support for respondent I, namely the family always supports the respondent in carrying out therapeutic interventions and also the family always exists in the respondent in sick or non-sick conditions, while respondent II the family always supports to carry out interventions and motivates the respondents in the respondent's recovery to do a diet to reduce the value of uric acid levels, and the family always supports the respondent's recovery. According to the researchers' assumptions, family support has a great influence on the success of soursop leaf decoction therapy in reducing uric acid levels in people with gout.

This can also be proven by research conducted by Nairar (2018), stating that the occurrence of family support for the treatment process in lowering uric acid levels experienced in gout sufferers is very important. The family plays a big role in supporting the recovery and

motivation of patients to undergo soursop leaf decoction therapy as well as providing psychological and moral support.

In addition to success factors, the factors that affect the occurrence of increased uric acid levels in people with gout include: gender, diet (foods high in purines) and obesity.

Based on gender, both respondents with female sex who experienced increased uric acid level prevention. According to the researchers' assumptions, the gender of the two respondents is female, female is the supporting gender for the risk of uric acid levels because women experience menopause which causes estrogen hormones to decrease.

This can also be proven by research conducted by Anis (2015), the increase in uric acid levels is most commonly suffered by elderly women. Menopausal women tend to experience increased uric acid levels more often due to a decrease in the hormone estrogen. The hormone estrogen plays a role in stimulating follicle development which is able to increase the speed of cell polyferation and inhibit the activity of protein kinase enzymes which have the function of accelerating metabolic activity, including purine metabolic activity. Meanwhile, in men, a greater percentage is suffered at the age of purity.

Based on the diet (foods that contain high purines) for the two respondents, respondent I often consumes foods that contain high fat such as meat offal, green vegetables and nuts while respondent II often consumes foods that contain high fat, green vegetables and ready-to-eat foods (*junk food*). According to the researchers' assumptions, diet is one of the triggers of gout, because a diet high in purine can make uric acid levels high and make respondents feel pain in parts of the body such as joints, toes and wrists.

This can also be proven by research conducted by Anis (2015), food consumption can affect uric acid levels, namely those found in meat and seafood related to the risk of increased uric acid levels. Then dairy products can reduce the risk of gout.

Based on the obesity of the two respondents, respondent I with a weight of 75 kg and a height of 156, while respondent II weighed 72 kg and a height of 155 which with an average weight and height of 155-156 were respondents with a condition of little obsessiveness and imbalance with weight. According to the assumption that the cause of the increase in uric acid levels in the two respondents is obesity or obesity, where both respondents do not do physical activities such as

exercise, small walks in the morning eating trigger gout occur due to obesity.

This can also be proven by research conducted by Nurlaili (2022), a person with obesity has triggered symptoms of disease that will occur due to the accumulation of fat in the body that cannot be described can cause such as increased uric acid, cholesterol, hypertension, diabetes mellitus, and other diseases.

Conclusion

The results of the study showed that the application of soursop leaf decoction was effective in reducing uric acid levels in people with gout. Based on the exposure of the focus of the case study and the discussion of the two respondents, there are factors that affect high uric acid including gender, lack of physical activity, diet and stress. Meanwhile, the success factors are compliance, frequency of giving and family support. The change decreased in respondent I from 7.3 mg/dl to 4.9 mg/dl while in respondent II from 8.8 mg/dl to 5.3 mg/dl.

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Author Contributions

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Conflicts of Interest

The authors declare no conflict of interest. The funders had no role in the design of the study, in the collection, analyses, or interpretation of data, in the writing of the manuscript; or in the decision to publish the results.

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