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THE EFECT OF BAY LEAFT (SYZYGIUM POLYANTHUM) DECOCTION ON URIC ACID LEVEL REDUCTION IN ELDERLY PATIENTS WITH GOUT ARTHRITIS IN SERANG VILLAGE

PENGARUH PEMBERIAN AIR REBUSAN DAUN SALAM (SYZYGIUM POLYANTHUM) TERHADAP PENURUNAN KADAR ASAM URAT PADA LANSIA PENDERITA ASAM URAT (GOUT ARTHRITIS) DI WILAYAH DESA SERANG

Sofiyatun Hasanah[1], Dwi Astuti[2], Priyatin Sulistyowati[3]
[1]Diploma III Nursing Study Program, Politeknik Yakpermas Banyumas, Email: sofiida54@gmail.com
[2]Teacher Diploma III Nursing Study Program, Politeknik Yakpermas Banyumas, Email: dwiast745@gmail.com
[3] Teacher Diploma III Nursing Study Program, Politeknik Yakpermas Banyumas, Email : sulistyowati5yakpermas@gmail.com

*email Koresponden: sofiida54@gmail.com

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Abstract

Background: Elderly individuals are at high risk of experiencing degenerative diseases, one of which is gout arthritis, caused by the accumulation of monosodium urate crystals in the joints due to hyperuricemia. Non-pharmacological therapies such as bay leaf (Syzygium polyanthum), which contains flavonoids, tannins, and essential oils, are believed to naturally reduce uric acid levels. Objective: To determine the effect of bay leaf decoction on reducing uric acid levels in elderly patients with gout arthritis in Serang Village. Method: This research used a descriptive approach with a case study method. The subject was one elderly person with gout arthritis who was given an intervention in the form of bay leaf decoction twice a day for four days. Results: The uric acid level before the intervention was 8.2 mg/dL and after the intervention was 4.2 mg/dL. The reduction of 4 mg/dL indicates that the bay leaf decoction was effective in lowering uric acid levels. Conclusion: Bay leaf decoction affects the reduction of uric acid levels in elderly patients with gout arthritis and can be used as a safe, easy, and affordable nonpharmacological alternative therapy.

Keywords: Bay Leaf, Uric Acid, Elderly

Abstrak

Background: Elderly individuals are at high risk of experiencing degenerative diseases, one of which is gout arthritis, caused by the accumulation of monosodium urate crystals in the joints due to hyperuricemia. Non-pharmacological therapies such as bay leaf (Syzygium polyanthum), which contains flavonoids, tannins, and essential oils, are believed to naturally

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1. INTRODUCTION

The term "gout" is used to describe inflammation that arises in and around joints due to the accumulation of monosodium urate crystals in and around the joints. Increased levels of uric acid in the blood, also known as hyperuricemia, can cause sharp crystals to form in the joints, leading to pain, swelling, redness, and heat. Hyperuricemia or elevated uric acid levels in the blood can lead to gout, a disease characterized by pain, especially in the joints, due to the accumulation of monosodium urate crystals in the joints and soft tissues (Wulandari, 2023).

Gout is a condition caused by an abnormality in purine metabolism, known as hyperuricemia. In this condition, there can be an overproduction of uric acid or a decrease in kidney function, leading to the body's inability to excrete uric acid, or a combination of both. Joint pain is a common problem for people with gout, especially at night and in the morning (Wulandari, 2023).

The bay leaf, also known as "Daun Salam" in Indonesian, is a spice commonly used in Indonesian cuisine. It comes from the Syzygium polyanthum tree and is known for its numerous health benefits, including lowering blood sugar, cholesterol, and triglyceride levels, reducing uric acid levels, stress, and anxiety, preventing hypertension, and improving heart and cardiovascular health (Rizka et al., 2024).

Aging is a natural process that occurs in the human body, including a decline in cellular function and tissue function, leading to a decrease in physical strength and an increase in uric acid levels. Elderly individuals are more susceptible to various diseases and syndromes compared to younger adults (Wulandari, 2023).

According to the World Health Organization (WHO), the global prevalence of gout is 34.2%. In developed countries, the United States has the highest prevalence of gout, with 26.3% of its population affected. Indonesia ranks fourth in the world in terms of the number of people with gout. In Indonesia, the number of cases of gout diagnosed by a doctor is 7.3%, and the prevalence is 35% in men over 45 years old. The prevalence of gout increases with age, with 51.9% of people aged 65-74 years and 54.8% of people aged 75 years and above affected (Mei 2023).

The WHO reports that 840 out of every 100,000 people suffer from gout, and 68% of patients in Indonesia are under the age of 34. Only 24% of patients with gout consult a doctor, and 71% use over-the-counter pain relievers. According to the 2018 Basic Health Research

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(RISKESDAS), the prevalence of joint disease in Indonesia is 7.3%. In Central Java, the prevalence of gout ranges from 2.6% to 47.2% of the population (Nabila & Karyawati, 2024).

Two types of medications are used in pharmacological therapy to treat hyperuricemia: uricosuric agents, which increase the elimination of uric acid, and uricostatic agents, which reduce the production of uric acid. Allopurinol is a medication that inhibits the production of uric acid by blocking the enzyme xanthine oxidase. However, allopurinol can cause hypersensitivity reactions, such as rash, hives, and exfoliative reactions.

Traditional medicine, including herbal remedies, has been studied for its potential in maintaining health and preventing and treating diseases, especially degenerative diseases, tumors, and chronic diseases. One herbal remedy that has been studied is the use of bay leaves (Syzygium polyanthum) to reduce uric acid levels. Bay leaves contain flavonoids that support the excretion of uric acid through urine and lower uric acid levels in the blood (Darisa et al., 2021).

A study conducted by Wulandari (2023) found that drinking bay leaf water (Syzygium polyanthum) can lower uric acid levels in the blood. Consuming foods high in purines can increase uric acid levels in the blood. Normal uric acid levels in the blood are 2-5.6 mg/dL for adult women and 2-4.2 mg/dL for adult men. For elderly women, normal uric acid levels are 2-8 mg/dL, and for elderly men, normal uric acid levels are 2-5.8 mg/dL.

Based on the background above, the author is interested in conducting a study on the effect of bay leaf water (Syzygium polyanthum) on reducing uric acid levels in elderly patients with gout in Serang Village.

2. RESEARCH METHOD

This scientific work applies a descriptive research design. Descriptive research is conducted systematically and emphasizes facts rather than conclusions to provide an overview of important events that are occurring. This study investigates the relationship between anxiety in preschool-age children and play therapy and storytelling techniques. One research subject is children who receive play therapy and storytelling techniques to reduce their anxiety (Rahayu 2023)

3. RESULTS AND DISCUSSION

Pemeriksaan	Tanggal	Waktu	Hasil (mg/dL)
Sebelum Intervensi (*Pre*)	1 Juni 2025	Pagi Hari	8,2 mg/dL
SesudahIntervensi (*Post*)	5 Juni 2025	Sore Hari	4,2 mg/dL

On June 1, 2025, the uric acid level was observed to be 8.2 mg/dL in the morning. Over time, there was a gradual decrease in uric acid levels. The uric acid level was rechecked on the last day of implementation, June 5, in the afternoon, and showed a level of 4.2 mg/dL, resulting

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in a decrease of 4 mg/dL. This data indicates a clear decrease in uric acid levels during the research period.

DISCUSSION

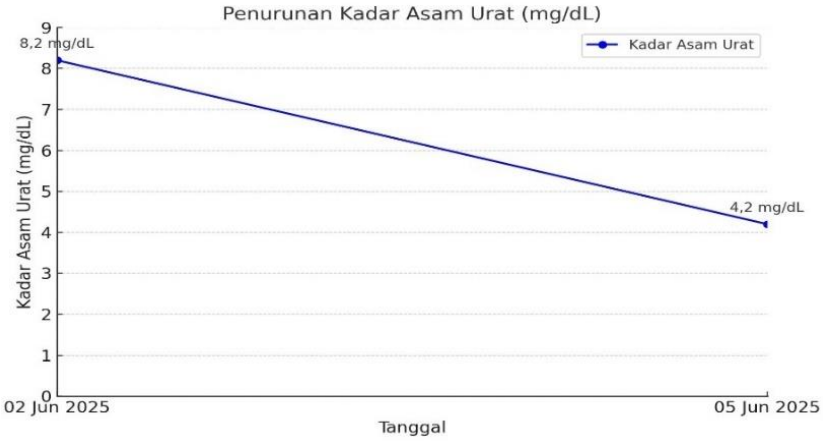

Figure 4.1 Graph of decrease in uric acid levels
Source: Personal Collection 2025

This case study aims to understand the effect of bay leaf decoction on reducing uric acid levels in elderly patients with gout arthritis. Sampling, time contracts, and education were conducted on June 1, 2025, at 07:30 WIB. The intervention was carried out for four consecutive days, from June 2 to June 5, 2025, with administration twice a day, in the morning and afternoon before meals.

Figure 4.1 shows the changes in uric acid levels (in mg/dL) at the beginning and end of the implementation from June 2 to June 5, 2025. On day 0, a pre-test was conducted (June 1, 2025) to determine the initial uric acid level before administering the bay leaf decoction. The value obtained was 8.2 mg/dL, indicating that the respondent had hyperuricemia. This result served as a basis for evaluating the effectiveness of the intervention to be conducted over the next four days.

On day 0, education was also provided to the respondent to avoid consuming high-purine foods, such as organ meats, seafood, and high-protein foods. This education is crucial to support the success of the bay leaf decoction intervention, ensuring that no other factors influence the decrease in uric acid levels besides the decoction.

On day 1 (June 2, 2025), after the intervention began, it was expected that uric acid levels would decrease compared to the pre-test results before administering the bay leaf decoction, and this trend would continue over the next three days. The intervention included education on a low-purine diet and increased consumption of bay leaf decoction, which was applied from the initial phase and throughout the intervention.

On day 2 of the intervention, the respondent began consuming 200 cc of bay leaf decoction twice a day (100 cc in the morning and 100 cc in the afternoon) before meals. The decoction was made by boiling 10 fresh bay leaves in 600 ml of water until 200 cc remained. After consumption, some elderly respondents reported feeling lighter and experiencing reduced joint pain, although it had not completely disappeared. The initial examination results showed that uric acid levels were still relatively high but began to show a decreasing trend compared

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to before the intervention. The respondent's overall condition remained stable, and no side effects from consuming the decoction were reported.

On day 3, the respondent continued to consume 200 cc of bay leaf decoction as on the previous day. The diuretic effect became more noticeable, marked by an increase in urination frequency, indicating the process of eliminating excess uric acid from the body. The respondent began to experience more significant improvements, especially in the joints that were previously painful and stiff. Overall, the body's response to the intervention was quite positive, and the elderly felt more comfortable and confident in continuing this natural treatment.

The respondent showed an increase in uric acid levels related to high purine consumption. Continued intervention showed a decrease in uric acid levels, and lifestyle education had a significant impact on purine metabolism. Uric acid levels can fluctuate dynamically depending on lifestyle and health interventions. Monitoring uric acid levels and educating patients about avoiding high-purine foods play a crucial role in managing hyperuricemia (Chen et al., 2024).

On day 4 (June 5, 2025), with a measurement result of 4.2 mg/dL, uric acid levels decreased by 0.7 mg/dL. Overall, uric acid levels decreased from 8.2 mg/dL (day 0, June 1, 2025) to 4.2 mg/dL (day 5, June 5, 2025). This decrease indicates that consuming bay leaf decoction regularly twice a day (before meals) accompanied by education on avoiding high-purine foods has a significant effect in lowering uric acid levels in elderly patients with gout arthritis. This finding is consistent with previous research (Wulandari, 2023) stating that consuming bay leaf decoction for four consecutive days effectively lowers uric acid levels in elderly patients with gout arthritis.

The intervention was carried out by administering bay leaf decoction twice a day before meals. Education on a low-purine diet is essential for patients with gout, as it directly influences their knowledge about foods that should be consumed and avoided. This education helps them understand the relationship between high-purine food intake and increased uric acid levels and encourages healthier lifestyle changes. Educational media like flipcharts have been proven effective in presenting information in an engaging and easy-to-understand manner, especially for the elderly. With increased knowledge, patients with gout are expected to be more aware of controlling their diet to prevent recurrence and maintain a better quality of life (Kamal & Sabrian, 2025).

Based on the research results in Table 4.1, uric acid levels in patients with gout can be significantly lowered by boiling bay leaves. One alternative therapy that is inexpensive, simple, safe, and effective in reducing uric acid levels in patients with gout or arthritis is boiling bay leaves. Bay leaves (Syzygium polyanthum) are believed to support the reduction of uric acid levels in the blood. Bay leaves contain alkaloids, flavonoids, tannins, and essential oils, including citral and eugenol. Bay leaves can lower uric acid levels in the blood (diuretic) by facilitating its excretion through urine (Rizka et al., 2024).

After the intervention period, a significant decrease in uric acid levels was observed in the respondent. This effect is attributed to the active compounds in bay leaves, such as flavonoids and essential oils, which act as antioxidants and natural diuretics, helping to lower uric acid levels in the blood by increasing urinary excretion. Therefore, bay leaf decoction can be used as a non-pharmacological supportive therapy for elderly patients with hyperuricemia.

After the case study, the researcher also provided a post-test and further education to the respondent to enable them to consume bay leaf decoction independently and sustainably at home. This is consistent with previous research (Wulandari, 2023) stating that regular

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consumption of bay leaf decoction can help lower and maintain stable uric acid levels and prevent recurrence in patients with gout arthritis.

4. CONCLUSION

Based on the results of a 5-day case study on reducing uric acid levels in elderly patients with gout in Serang Village, it can be concluded that:

1. This study aims to understand the effect of bay leaf decoction on reducing uric acid levels in elderly patients with gout arthritis. This case study explains that the elderly are more susceptible to various degenerative diseases, including gout arthritis, due to decreased organ function. Gout arthritis is a form of joint inflammation caused by the accumulation of uric acid crystals. Bay leaves are traditionally used as herbal medicine, containing compounds such as flavonoids and essential oils, which are known for their antioxidant and diuretic properties, as well as inhibiting uric acid-forming enzymes.
2. The study used a descriptive case study method with one elderly subject with gout in Serang Village, Karangreja District, Purbalingga Regency. The intervention involved administering bay leaf decoction twice a day for four days. The results showed a decrease in uric acid levels from 8.2 mg/dL to 4.2 mg/dL after five days of intervention. This 4 mg/dL decrease supports the hypothesis that bay leaf decoction has an effect in reducing uric acid levels. The effectiveness of the intervention was also supported by education on a low-purine diet provided to the respondent.

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