

Artikel Penelitian

Application of Boiling Water from Salam Leaves (*Synzigium Polyanthum*) And Cinnamon (*Cinnamomun Burmanii*) on Hypertension Patients

Iskandar Muda¹, Annisa Aprillia Susanti¹, Khumaidi Khumaidi¹, Mayusef Sukmana¹

Abstrak

Pendahuluan: Hipertensi adalah suatu kondisi dimana tekanan darah tinggi berupa pada $\geq 140/90$ mmHg. Hipertensi mempunyai penatalaksanaan berupa terapi herbal. Terapi herbal yang dapat diterapkan yaitu dengan mengkonsumsi air rebusan daun salam (*S. polyanthum*) dan air rebusan kayu manis (*C. burmanii*). Kandungan yang terdapat dalam daun salam (*S. polyanthum*) dan kayu manis (*C. burmanii*) memiliki manfaat bagi penderita hipertensi yaitu dapat membantu menurunkan tekanan darah tinggi. **Tujuan:** Mengetahui gambaran sebelum dan sesudah penerapan air rebusan daun salam (*S. polyanthum*) dan kayu manis (*C. burmanii*) pada pasien hipertensi. **Metode:** Penelitian ini menggunakan metode deskriptif dengan pendekatan studi kasus yang dilaksanakan pada bulan Juli 2023 dengan dua responden dengan hipertensi grade 2 di wilayah Puskesmas Baqa dengan menggunakan SOP air rebusan daun salam (*S. polyanthum*) dan kayu manis (*C. burmanii*). **Hasil:** Tekanan darah R1= 173/102 mmHg sebelum diberikan terapi air rebusan daun salam (*S. polyanthum*) dan tekanan darah R2=178/107 mmHg sebelum diberikan air rebusan kayu manis (*C. burmanii*). Tekanan darah R1=153/109 mmHg setelah diberikan terapi air rebusan daun salam (*S. polyanthum*) dan tekanan darah R2=168/118 mmHg setelah diberikan air rebusan kayu manis (*C. burmanii*) masing-masing satu kali dalam sehari selama lima hari pemberian. **Kesimpulan:** Terdapat penurunan tekanan darah pada penderita hipertensi setelah diberikan ramuan air rebusan daun salam (*S. polyanthum*) dan kayu manis (*C. burmanii*).

Kata kunci: Air Rebusan Daun Salam (*S. polyanthum*) dan Kayu Manis (*C. burmanii*), Tekanan Darah, Hipertensi Grade 2.

Abstract

Background: Hypertension is having a condition where high blood pressure is $\geq 140/90$ mmHg. Hypertension has treatment in the form of herbal therapy. Herbal therapy that can be applied is by consuming water boiled with bay leaves (*S. polyanthum*) and water boiled with cinnamon (*C. burmanii*). The ingredients contained in bay leaves (*S. polyanthum*) and cinnamon (*C. burmanii*) have benefits for hypertension sufferers, namely, they can help reduce high blood pressure. **Objective:** The research aims to know application of boiling water from salam leaves (*S. polyanthum*) and cinnamon (*C. burmanii*) on hypertension patients. **Method:** This research used a descriptive method with a case study approach which was carried out in July 2023 with two respondents with grade 2 hypertension in the Baqa health center area using the SOP for boiled water from bay leaves (*S. polyanthum*) and cinnamon (*C. burmanii*). **Result:** Blood pressure R1 = 173/102 mmHg before being given bay leaf boiled water therapy (*S. polyanthum*) and blood pressure R2 = 178/107 mmHg before being given cinnamon boiled water (*C. burmanii*). Blood pressure R1=153/109 mmHg after being given bay leaf boiled water therapy (*S. polyanthum*) and blood pressure R2=168/118 mmHg after being given cinnamon boiled water (*C. burmanii*) each once a day for five days. **Conclusion:** There is a decrease in blood pressure in hypertension sufferers after being given a concoction of boiled water from bay leaves (*S. polyanthum*) and cinnamon (*C. burmanii*).

Keywords: Bay Leaf (*S. polyanthum*) and Cinnamon (*C. burmanii*) Boiled Water, Blood Pressure, Grade 2 Hypertension.

Submitted : 14 December 2023

Revised: 7 June 2024

Accepted: 12 June 2024

Affiliasi penulis : 1 Diploma of Nursing Program, Faculty of Medicine, Mulawaran University

Korespondensi : "Annisa Aprillia Susanti"
annisaapril050401@gmail.com Telp: +6282151202650

PENDAHULUAN

High blood pressure in the arteries is known as hypertension, and it can be brought on by a number of variables, including age, gender, heredity, and way of life. Since high blood pressure is typically not regarded as a serious illness, it can lead to complications like heart failure, stroke, blindness, and renal failure (1,2)

High blood pressure is one of the health issues that people in today encounter frequently. For those who have this illness,

there may be major, even fatal hazards. An estimated 1.56 billion individuals worldwide suffer from hypertension, and the condition is becoming more and more common. By 2025, 29% of adults worldwide are expected to have hypertension, a staggering proportion. Because of the numerous consequences that accompany this illness, hypertension is known as the "slow killer" or "silent killer" (3).

By taking blood pressure readings at age ≥ 18 , the prevalence of hypertension in Indonesia in 2018 was 34.1%. Compared to the 25.8% prevalence of hypertension in 2013, the prevalence has grown in 2018. In Indonesia, it is estimated that only one-third

of instances of hypertension are detected; the remaining cases go undiagnosed (4).

Since 2015, the most common disease that many people have been affected by is hypertension. The most prevalent illness in East Kalimantan, particularly in Samarinda, is hypertension. There will be 448,644 cases of hypertension in the United States in 2022 (5). Samarinda area has a 36.10% prevalence of hypertension, according to Riskesdas 2018.

Both pharmaceutical and herbal/non-pharmacological medications can be used to treat hypertension. Boiling water made from cinnamon (*C. burmanii*) and bay leaves (*S. polyanythum*) is one of the herbal remedies. Plants like cinnamon (*C. burmanii*) and bay leaves (*S. polyanythum*) are frequently utilized in Indonesian cuisine. Usable either dry or fresh. In addition to being a culinary spice, bay leaves are good for the body in treating conditions like diabetes, gastritis, stroke, and clogged blood arteries. The biggest concentrations of antioxidants, which have numerous health advantages, are found in these two plants. Bay leaves' mineral content lowers high blood pressure and enhances blood circulation (2,6). Consuming boiled water from bay leaves (*S. polyanythum*) and cinnamon (*C. burmanii*), which have significant antioxidant content, is one non-pharmacological treatment that can be used. According to the above description, researchers are curious about the use of boiled water infused with cinnamon (*C. burmanii*) and bay leaves (*S. polyanythum*) for people with hypertension.

METHODS

This research approach combines a descriptive method with a case study. This study employs a research design with two participants who meet the following inclusion criteria: patients with grade 2 hypertension (measurements $\geq 160/100$ mmHg), patients between the ages of 18 and 45, and patients not receiving pharmaceutical therapy for their hypertension. Patients without a history of hypertension, as well as those with grade one and grade three hypertension, are excluded.

The researchers' method of data analysis involved comparing the blood pressure readings of each respondent before and after two hours were given 200 ml of boiled water made from bay leaves (*S. polyanthum*) and cinnamon (*C. burmani*), which was applied once over the course of five days. Ehtical Clearance No. 183/KEPK-FK/IX/2023.

RESULTS

The findings of a seven-day study conducted in 2023 comparing twp participants with similar characteristic, blood pressure readings taken before and after consuming water boiled wirh cinnamon and bay leaves, and the variation in decline between the two participants, namely

Table 1. Characteristics of the Respondent

| No | R | Sex | Age | Address | Education | Occupation | HDY |
|----|----|-----|-----|-----------|-----------|---------------|-----|
| 1 | R1 | M | 37 | Samarinda | HS | Self-employed | 4 |
| 2 | R2 | W | 37 | Samarinda | Diploma | Housewife | 3 |

Information
 R : Responden
 M: Men
 W: Women
 HDY: History of Diseases Years

Table 2. Blood Pressure Measurements Before and After Using Bay Leaf Boiled Water (*S. polyantum*)

| Day | Respondent | Before | After |
|-----|------------|---------|---------|
| 1 | R1 | 173/102 | 145/115 |
| 2 | | 171/130 | 141/101 |
| 3 | | 150/111 | 149/108 |
| 4 | | 164/119 | 157/119 |
| 5 | | 171/130 | 153/109 |

Table 3. Blood Pressure Measurements Before and After Usiang Cinnamon Boiled Water (*C. Burmanii*)

| Day | Respondent | Before | After |
|-----|------------|---------|---------|
| 1 | R2 | 178/107 | 168/118 |
| 2 | | 164/105 | 143/90 |
| 3 | | 163/112 | 132/101 |
| 4 | | 169/104 | 147/112 |
| 5 | | 171/114 | 168/118 |

Table 4. Daily Variations in Blood Pressure Drop

| R | Daily Variations in Blood Pressure Drop | | | | |
|----|---|-------|-------|-------|-------|
| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
| R1 | S: 28 | S: 30 | S: 1 | S: 7 | S: 18 |
| | D :13 | D: 29 | D: 7 | D: 0 | D: 21 |
| R2 | S: 3 | S: 21 | S: 31 | S: 22 | S: 17 |
| | D: 4 | D:15 | D: 8 | D: 8 | D: 11 |

Information:
 R: Respondent
 S: Systolic
 D: Diastolic

DISCUSSION

The two responders of investigation were male and female. According to study relating to hypertension, female patients have a greater rate, namely 65%, compared to male patients, namely 35%. It is believed that women are less able to handle stress than men. Sympathetic nerves, which raise blood pressure, are linked to elevated blood pressure during stress. The hormone epinephrine or adrenaline will be released during stress. Adrenaline will increase blood pressure via narrowing blood vessels (vasoconstriction) and increasing heart rate, so that people will experience elevated blood pressure. Furthermore, women who reach menopause beyond the age of 40 will see a drop in the hormone estrogen (7).

R1 is self-employed. Among the tasks that R1 performs for his job are not labor-intensive tasks like overseeing the upkeep and cleaning of PDAM water, creating reports, etc. The kind of work one performs affects how much physical activity one does. Blood pressure is affected by jobs that don't require physical activity, while those who work in physical activity can avoid hypertension. In addition, employment using computers and sitting for longer than five hours a day, such as those held by bank personnel, chauffeurs, security guards, and others in office settings, reduce physical activity and increase the risk of hypertension¹⁰. Day 4's application on R1 revealed no changes in.

R2 is a stay-at-home mom. Due to the fact that being inactive might raise the risk of being overweight and, consequently, elevated blood pressure, women who are housewives or do not work are more likely to experience hypertension than women who work (8). Those without jobs are more likely to suffer from hypertension than those who work, while those who work or work with significant physical activity will actually engage in more outdoor activities, making them more active than those without jobs (9). Bad lifestyle:

As a result of modernization, many people now lead unhealthy lifestyles that include overeating, excessive physical activity, heavy smoking, and sleep deprivation. These lifestyle changes, particularly in those over 40, increase the risk of cardiovascular disease, one of which is hypertension, or high blood pressure.

Being sedentary, consuming fatty and salty meals, and being overweight are all risk factors for high blood pressure. Being overweight or obese increases the risk of high blood pressure. One characteristic of the hypertensive population is obesity. Compared to non-obese hypertension patients, obese hypertensive patients have increased cardiac output and circulating blood volume. Compared to hypertensive patients of normal weight, obese hypertensive patients have increased cardiac pumping capacity and circulating blood volume (10).

The R1 diastolic blood pressure, which was 119 mmHg on the fourth day, did not alter between before and after administration. I ate fatty items, such as rendang-prepared meat, after using R1, so my blood pressure did not change. If diet is not properly maintained, it can contribute to hypertension.

An overview of boiling bay leaves (*S. polyanthum*) and cinnamon (*C. burmanii*) in water.

The benefits of boiling bay leaves (*S. polyanthum*) and cinnamon (*C. burmanii*) include the former's blood pressure-lowering properties and the latter's presence of blood pressure-lowering flavonoid components. Blood vessel and raising intravascular blood pressure in order to get the blood pressure back to normal (11). Bay leaves are used by the Indonesian people to treat diarrhea, ulcers, high blood pressure, diabetes, and high cholesterol. Research has demonstrated the effectiveness of bay leaves, with findings indicating that the leaves contain compounds that can help lower blood pressure, cholesterol, blood sugar, and even act as antibiotics (12). Bay leaf extracts which include young leaves, half-old leaves and old leaves have very strong antioxidant power with IC₅₀ values obtained respectively 37,441 ppm, 14,889 ppm and 11,001 ppm⁹ (13).

Because boiled water therapy with bay leaves (*S. polyanthum*) and cinnamon (*C. burmanii*) can reduce fat deposits in blood vessels, it can help the heart circulate blood that contains nutrients and oxygen^(6,13). There are three active ingredients in bay leaves (*S. polyanthum*): flavonoids, which act as ACE inhibitors to limit the formation of angiotensin II and prevent hypertension; tannins, which relax arterial muscles and lower blood pressure in hypertension sufferers; and essential oils, which as

aromatherapy can calm the mind and reduce the production of stress hormones (13).

Although it is primarily used as a spice in cooking, cinnamon (*C. burmannii*) is a natural component that may also have therapeutic benefits. Three mechanisms underlie the action of cinnamon decoction (*C. burmannii*) in decreasing blood pressure: breaking up blood clots, promoting blood circulation, and preventing the absorption of cholesterol. Antioxidants can be found in food from cinnamon (*C. burmannii*). After being extracted with distilled water, cinnamon had an antioxidant activity of 45.42%.

The polyphenolic chemicals found in cinnamon (*C. burmannii*) include eugenol, cinnamic acid, epicatechin, and catechin (13). Eugenol and cinnamaldehyde are two examples of the antibacterial and antioxidant substances found in cinnamon bark (*C. burmannii*). Cinnamon (*C. burmannii*) contains low-fat components and antibacterial, antifungal, antiviral, antioxidant, anticancer, and blood pressure and cholesterol lowering properties (20). Here, flavonoids both stop and eliminate blood clots. Flavonoids have the ability to stabilize or reduce single oxygen atoms (14).

In this investigation, the application of boiling bay leaf water resulted in a noticeable drop in blood pressure a few minutes later. It takes approximately two hours after applying cinnamon (*C. burmannii*) heated water to lower high blood pressure. More quickly than water cooked with cinnamon (*C. burmannii*), bay leaf-infused water decreases high blood pressure.

In addition to being useful in reducing hypertension, boiling water infused with bay leaves and cinnamon has the benefit of being readily available. You may purchase cinnamon and bay leaves for relatively little money from kitchen spice vendors or at the market. With these benefits, it can lessen the need for ongoing medication and assist those with hypertension who are struggling financially.

CONCLUSION

This study concludes that boiling water infused with bay leaves (*S. polyanthum*) and cinnamon (*C. burmannii*) can affect variations in blood pressure in individuals hypertensive. It can be alternative ways for patients with hypertensive to decrease their blood pressure.

REFERENCES

1. Nuraini B. Risk Factors Of Hypertension. J Major. 2015 Jan;4(5).
2. Silalahi KL, Nainggolan N, Simanjuntak S, Anza G. Pengaruh Rebusan Daun Salam Terhadap Penurunan Tekanan Darah Tinggi Pada Penderita Hipertensi. J Penelit Perawat Prof. 2020;2(4):431–6.
3. World Health Organization. World Health Statistics [Internet]. 2020 [cited 2023 May 8]. Available from: <https://www.who.int/data/gho/publications/world-health-statistics>
4. Kemenkes RI. Laporan Riskedas 2018 Nasional. Lembaga Penerbit Badan Penelitian dan Pengembangan Kesehatan; 2018. [Internet]. 2018 [cited 2023 May 8]. Available from: <https://repository.badankebijakan.kemkes.go.id/id/eprint/3514/>
5. Dinkes Kaltim. Data Penyakit Tidak Menular atau Degeneratif Provinsi Kaltim Tahun 2019-2022. [Internet]. 2022 [cited 2023 May 8]. Available from: <https://data.kaltimprov.go.id/gl/dataset/data-penyakit-tidak-menular-atau-degeneratif-provinsi-kaltim-tahun-2019-2021>
6. Agustina R, Annisa N, Prabowo WC. Potensi Interaksi Obat Resep Pasien Hipertensi di Salah Satu Rumah Sakit Pemerintah di Kota Samarinda. J Sains dan Kesehat. 2015;1(4):208–13.
7. Rahayu ES, Wahyuni KI, Anindita PR. Hubungan Tingkat Pengetahuan Dengan Kepatuhan Minum Obat Pada Pasien Hipertensi Di Rumah Sakit X Cilacap. J Ilm Farm Farmasyifa. 2021;4(01):87–97.
8. Martiningsih U, Rachmadi F, Fahdi FK. Hubungan Peran Petugas Kesehatan Terhadap Kepatuhan Minum Obat Antihipertensi Pada Penderita Hipertensi Di Wilayah Kerja Puskesmas Parit H. Husin II Kota Pontianak. J Penelit Pendidik Guru Sekol Dasar. 2016 August;6:128.
9. Sitorus RS. Hubungan Pola Hidup Dengan Hipertensi Pada Pasien Hipertensi Di Lingkungan Iii Sei Putih Timur II Wilayah Kerja Puskesmas Rantang Medan. J Keperawatan Prior. 2018;1(2):1005–114.
10. Yulianti TS, Setyaningsih R, Suryaningsih M. Pengaruh Air Rebusan Daun Salam Terhadap

- Penurunan Tekanan Darah Pada Penderita Hipertensi Di Dukuh Jangkung Rejo Nogosari Boyolali. KOSALA J Ilmu Kesehat. 2015;2(2).
11. Rhamadan R, Restiana N, Bahrudin U. Penerapan Rebusan Daun Salam Untuk Menurunkan Tekanan Darah Pada Penderita Hipertensi Di Desa Pasirlaja. Healthc Nurs J. 2022;4(2b).
 12. Tammi A, Apriliana E, Sholeha TU. Potensi ekstrak daun salam (*Syzygium polyanthum* [Wight.] Walp.) sebagai antibakteri terhadap *Staphylococcus aureus* secara in vitro. J Agromedicine Unila. 2018;5(2):565.
 13. Bahriul P, Rahman N, Diah AWM. Uji Aktivitas Antioksidan Ekstrak Daun Salam (*Syzygium polyanthum*) Dengan Menggunakan 1,1-Difenil-2-Pikrilhidrazil. J Akad Kim. 2014;3(August):143–9.
 14. Handayani F, Paneo I. Pengaruh Kayu Manis Terhadap Penurunan Tekanan Darah Pasien Hipertensi di Puskesmas Talaga Jaya. J Zaitun. 2022.