

Comparison of Adherence to the Use of Herbal Medicine with Conventional Medicine in Hypertensive Patients at Lempake Public Health Center, Samarinda City

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Comparison of Adherence to the Use of Herbal Medicine with Conventional Medicine in Hypertensive Patients at Lempake Public Health Center, Samarinda City

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Abstrak

Latar belakang: Hipertensi adalah masalah kesehatan utama di dunia, termasuk Indonesia. Penggunaan obat bahan alam untuk hipertensi telah meningkat dalam dekade terakhir. Biaya penggunaan obat bahan alam dianggap lebih murah dengan efek samping yang lebih sedikit. Penelitian ini bertujuan untuk melihat tingkat kepatuhan penggunaan obat pada pasien hipertensi yang berobat ke Pusat Kesehatan Masyarakat (Puskesmas) di Kota Samarinda, Kalimantan Timur.

Metode: Penelitian dilaksanakan di Puskesmas Lempake Kota Samarinda pada bulan Juli hingga Agustus 2017. Responden penelitian adalah 63 pasien hipertensi yang datang berobat dan memenuhi kriteria penelitian. Pasien hipertensi selanjutnya diwawancarai menggunakan kuesioner MMAS (Morisky Medication Adherence Scale).

Hasil: Sebanyak 56% pasien hipertensi juga menggunakan obat bahan alam selain obat konvensional untuk hipertensi. Daun sirsak (*Amnona muricata*), daun salam (*Syzygium polyanthum*), dan buah mentimun (*Cucumis sativus*) adalah bahan alam yang paling banyak digunakan oleh pasien hipertensi. Rerata tekanan darah sistolik ($p=0,004$; 95% CI -19,8 – -3,8) dan diastolik ($p=0,038$; 95% CI -9,6 – -0,29) untuk pengguna bahan alam lebih rendah jika dibandingkan dengan pengguna obat konvensional. Rerata MMAS untuk pengguna bahan alam lebih tinggi jika dibandingkan dengan pengguna obat konvensional ($p=0,004$; 95% CI 0,31 – 1,6). Hal ini menunjukkan bahwa pasien lebih patuh menggunakan obat bahan alam dibandingkan obat konvensional untuk hipertensi.

Kesimpulan: Hasil penelitian menunjukkan perlunya edukasi pengobatan hipertensi ke komunitas, baik itu obat bahan alam maupun konvensional. Hasil penelitian juga menunjukkan kepatuhan yang lebih baik pada penggunaan obat bahan alam dibandingkan obat konvensional untuk hipertensi. Hal ini menunjukkan potensi menjanjikan penggunaan obat bahan alam untuk hipertensi di masa depan. (*Health Science Journal of Indonesia* 2018;9(2):82-6)

Kata kunci: Kepatuhan, obat bahan alam, hipertensi, Puskesmas Lempake Kota Samarinda

Abstract

Background: Hypertension is major health problem worldwide, including Indonesia. The use of herbal medicines for hypertension has increased in the past decade. The price of herbal medicines considered cheaper with fewer side effects. This study tried to see the level of adherence to the use of medicine by hypertensive patients in community health center at Samarinda City, East Kalimantan.

Methods: This study conducted at Lempake Community Health Center in Samarinda City from July until August 2017. The subjects of this study are 63 hypertensive patients and meet the sample criteria set by the researchers. The study interviewing hypertensive patients with MMAS (Morisky Medication Adherence Scale) questionnaire.

Results: The results showed 56% of hypertensive patients also use herbal other than conventional medicine. Soursop (*Amnona muricata*) leaves, salam (*Syzygium polyanthum*) leaves, and cucumber (*Cucumis sativus*) fruit were the most frequent herbal medicines used by hypertensive patients. The mean blood pressure of herbal medicine users was significantly lower when compared with conventional medicine users for systolic ($p=0.004$; 95% CI -19.8 – -3.8) and diastolic blood pressure ($p=0.038$; 95% CI -9.6 – -0.29). The mean score of MMAS in herbal medicine users was significantly higher when compared with conventional medicine users ($p=0.004$; 95% CI 0.31 – 1.6). This suggests that patients are more adherent in using herbal than the conventional medicine for hypertension.

Conclusion: The result of the study shows the need for herbal and conventional medicine education for hypertension in the community. The result also shows better patient adherence to herbal medicine compared to conventional medicine, as the promising future of herbal medicine for hypertension. (*Health Science Journal of Indonesia* 2018;9(2):82-6)

Keywords: Adherence, herbal medicine, hypertension, Lempake Public Health Center Samarinda City

Hypertension is a condition when blood pressure increases chronically. Hypertension happens when the heart works harder to pump blood to meet the needs of oxygen and nutrients in the body. Hypertension may interfere with the functioning of other organs, especially vital organs such as the heart and kidneys. The hypertension criteria are the result of measurement of systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg¹. Hypertension prevalence in Indonesia is 25.8%, with the highest prevalence in Bangka Belitung (30.9%), followed by South Kalimantan (30.8%), East Kalimantan (29.6%) and West Java (29.4%)².

Herbal medicine defined as traditional medicine derived from plants, including herbs, herbal materials, herbal preparations, and finished herbal products that contain active ingredients in parts of plants³. Data from Ministry of Health Republic Indonesia shows that 49% of households use traditional herbal medicine. Sixty percent of Indonesians adult stated that they had ever been drinking herbal medicine, and 90% of them stated that there was a benefit of drinking herbal medicine⁴.

Traditional herbal medicine has been widely practiced in Indonesia. The use of herbal medicine for hypertension has increased in the past decade. The price of herbal medicines is considered cheaper with fewer side effects⁵. Research about herbal medicine usage for hypertension as the most frequent chronic diseases in Indonesia is still limited. To the best of our knowledge, there is no published research about the herbal medicine adherence for hypertension. Based on the above information, the aim of the study is to know the differences between herbal and conventional medicine adherence in hypertensive patients particularly at the primary healthcare settings.

METHODS

This study was conducted at Lempake Community Health Center in Samarinda City from July until August 2017. Lempake is a district in Samarinda City dominantly transmigrant people from Java. Sociocultural for herbal medicine from Javanese people are higher than others ethnic. The subjects of this study were 63 hypertensive patients and met the sample criteria set by the researchers. Research variables include blood pressure, herbal and conventional medicine use for hypertension and adherence to herbal and conventional medicine for hypertension.

Inclusion criteria are all hypertension patients who came to the Lempake Public Health Center and willing to participate in the study. Exclusion criteria are patients who have any other chronic diseases related to hypertension, like diabetes or heart diseases. The study uses non-random sampling or convenience sampling. All hypertension patients got lowering blood pressure drug from the public health center, but in the interview, researchers asked about whether they use any herbal medicines or not. Researchers measured blood pressure using mercury tensimeter which is available in the public health centers. Patients were measured three times every one minute and took the average of systolic and diastolic value. There was one researcher who did the blood pressure measurement and one researcher who did the interview. There were blinding the principle by using two separate room for blood pressure measurement and interview to the patients. Each researcher did not know the level of the patient's blood pressure or status their medication. The study protocol was approved by the Research Ethics Committee on Faculty of Medicine Mulawarman University.

Data were obtained from the medical record and interview using questionnaires to hypertension patients at the community health center. Level of adherence to herbal and conventional medicine for hypertension were measured by MMAS (Morisky Medication Adherence Scale) questionnaire. We performed a preliminary study for 10 patients to validate the questionnaire. There were 8 questions in MMAS: ever forget to take medicines; ever not taking medicines in last 2 weeks; stop taking medicines when feeling worse with medicines; ever forget to bring medicines when travelling; take medicines yesterday; when feel better stops taking medicines; have problems adhering to take medicine; have problem remembering to take medicine⁶. MMAS-8 questionnaire showed in Table 1. Obtained data were then statistically analyzed by independent t-test using PSPPIRE 1.0.1 software with the level of confidence at 95% ($p < 0.05$).

RESULTS

The result of the study shows thirty-five (56%) hypertension patients reported using herbal medicine. The most frequent herbal medicines used by hypertensive patients are soursop (*Annona muricata*) leaves (39.4%), salam (*Syzygium polyanthum*) leaves (30.3%) and cucumber (*Cucumis sativus*) fruit (30.3%). Table 2 and 3 show characteristics of respondent and types of herbal medicine in this study.

Table 1. MMAS-8 Questionnaire

Morisky Medication Adherence Scales: MMAS-8	
1	Do you sometimes forget to take your pills?
2	People sometimes miss taking their medications for reasons other than forgetting. Thinking over the past two weeks, were there any days when you did not take your medicine?
3	Have you ever cut back or stopped taking your medicine without telling your doctor because you felt worse when you took it?
4	When you travel or leave home, do you sometimes forget to bring along your medicine?
5	Did you take all your medicine yesterday?
6	When you feel like your symptoms are under control, do you sometimes stop taking your medicine?
7	Taking medicine every day is a real inconvenience for some people. Do you ever feel hassled about sticking to your treatment plan?
8	How often do you have difficulty remembering to take all your medicine? (a) Never/rarely; (b) Once in a while; (c) Sometimes; (d) Usually; (e) All the time.

The mean blood pressure of herbal medicine users was significantly lower when compared with conventional medicine users for systolic ($p=0.004$; 95% CI -19.8 – -3.8) and diastolic blood pressure ($p=0.038$; 95% CI -9.6 – -0.29). The mean score of MMAS in herbal medicine users was significantly higher when compared with conventional medicine users ($p=0.004$; 95% CI 0.31 – 1.6). Levene’s test for MMAS score with significance = 0.559 and it means equal variance assumed. Figure 1 and 2 show differences of blood pressure and MMAS score between herbal and conventional medicine users.

Table 2. Characteristics of respondents at Lempake Community Health Center, Samarinda City, 2017

	Herbal Medicines		Conventional Medicines		Total	
	n	%	n	%	n	%
Sex						
Females	28	62.2	17	37.8	45	71.4
Males	7	38.9	11	61.1	18	28.6
Age						
30-39 years	2	100	0	0	2	3.2
40-49 years	13	86.7	2	13.3	15	23.8
50-59 years	11	40.7	16	59.3	27	42.8
60-69 years	7	43.8	9	56.2	16	25.4
>= 70 years	2	66.7	1	33.3	3	4.8
Education						
No school	4	57.1	3	42.9	7	11.1
Elementary school	14	56.0	11	44.0	25	39.7
Junior high school	8	72.7	3	27.3	11	17.5
Senior high school	6	40.0	9	60.0	15	23.8
University	3	60.0	2	40.0	5	7.9

Table 3. Types of herbal medicine used by respondent at Lempake Community Health Center, Samarinda City, 2017

Herbal medicines	n	%
Soursop leaves	13	39.4
Salam leaves	10	30.3
Cucumber fruit	10	30.3
Kersen leaves	4	12.1
Betel leaves	3	9.1
Watermelon fruit	3	9.1
Celery leaves	3	9.1
Lemongrass leaves	2	6.1
Lemon fruit	1	3.0
Petai fruit	1	3.0
Beluntas leaves	1	3.0
Ginger	1	3.0
Turmeric	1	3.0

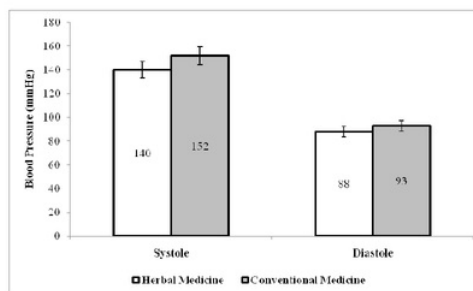


Figure 1. Differences in systole and diastole blood pressure between patients using herbal and conventional medicine for hypertension ($p=0.004$ [95% CI -19.8 – -3.8] for systole; $p=0.038$ [95% CI -9.6 – -0.29] for diastole)

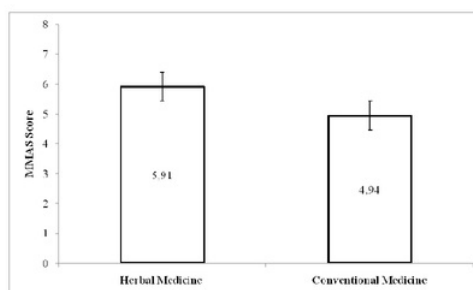


Figure 2. Mean differences in MMAS score between patients using herbal and conventional medicine for hypertension ($p=0.004$ [95% CI 0.31 – 1.6])

DISCUSSION

The results of this study show that 56% of hypertensive patients use herbal medicines as complementary therapies. This is the similar result with another research found that almost half of the respondent in Indonesia use herbal medicine, with a quarter of the respondent use herbal medicine for treating hypertension⁷. Similar result with another study found that 70.9% of patients with hypertension also uses natural medicines⁸. It also found the soursop leaves, salam leaves, and cucumber fruit are the most frequent herbal medicine used by hypertensive patients. The results of this study are slightly different from the national standard antihypertensive herbal formulation consisting of medicinal plant extracts, including celery (*Apium graveolens*) herbs and whiskers cat (*Orthosiphon aristatus*) leaves. These herbal medicines have been officially recommended for hypertension by the Ministry of Health, Republic of Indonesia⁸.

The result of this study shows that systolic and diastolic blood pressure of herbal medicine users was lower than conventional one. This is the similar result with another study that the decrease in diastolic blood pressure in conventional drug combination with natural medicine was better than that of conventional drug alone⁹. Other study found that patients who underwent conventional medicine along with herbal medicine, had a better quality of life, compared to patients who only underwent herbal medicine¹⁰.

All of these medicinal plants have the scientific base for antihypertensive effects. The results of this study show that hypertensive patients use soursop leaves to lower blood pressure. This is in accordance with studies showing that extracts of soursop leaves can significantly reduce blood pressure without affecting heart rate¹¹. The hypotension effect of soursop leaves extracts through a peripheral mechanism involving calcium ion antagonists with blockade of calcium ion channels¹². The hypotension effect of soursop leaves is caused by alkaloid content such as coreximine, anomurine, and reticulin, as well as some components of essential oils such as b-caryophyllene¹³. The results of this study show that hypertensive patients use salam leaves to lower blood pressure. The mechanism of action of salam leaves as antihypertensive through the binding of adrenergic and cholinergic beta receptors with nitric oxide¹⁴, and through ACE inhibition¹⁵. It shows that

hypertensive patients use cucumbers to lower blood pressure. This is in accordance with studies showing that administration of cucumber juice can decrease diastolic blood pressure between treatment groups compared with the control group¹⁶.

The result of this study shows that MMAS score for herbal medicine was higher than conventional medicine. This suggests that patients are more adherent in using herbal medicine than the conventional medicine for hypertension. Adherence to treatment is mainly influenced by the patient perception towards the effectiveness of treatment and the health care quality (its availability and affordability, and the relationship between patient and provider). In the setting where care provided by a conventional health system is dissatisfactory, patients seem more likely to use alternative care known as herbal medicine¹⁷. Interest in herbal medicines was commonly attributed to three main reasons: lack of funds to go to the hospital, pressure from relatives and friends, and the desire for a complete cure¹⁸. Many factors could play a role in the decision-making, including previous experience with the conventional drug, openness to herbal therapy, and cost associated with conventional drug and herbal therapy¹⁹.

This study has limitations. First, we conducted interviews at a community health center in Samarinda City, East Kalimantan. Our results could not be generalized to other regions without caution and studies. Second, we interviewed patients who came to the interview sites. If this convenience sampling had better medication adherence than those who were not surveyed, our findings of adherence level could be overestimated. However, our study focused on the comparison between herbal medicine and conventional drug users. Thus, the potential sampling bias is less likely to influence our results.

In conclusion, the results showed 56% of hypertensive patients also use herbal medicine other than conventional medicine. Soursop (*Annona muricata*) leaves, salam (*Syzygium polyanthum*) leaves, and cucumber (*Cucumis sativus*) fruit were the most frequent herbal medicines used by hypertensive patients. The mean blood pressure of herbal medicine users was significantly lower when compared with conventional medicine users for systolic and diastolic blood pressure. The mean score of MMAS in herbal medicine users was significantly higher when compared with conventional medicine users. This suggests that patients are more adherent in using herbal than the conventional medicine for

hypertension. The result of the study shows the need for herbal and conventional medicine education for hypertension in the community. The result also shows better patient adherence to herbal medicine compared to conventional medicine, as the promising future of herbal medicine for hypertension.

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