

***Syzygium Polyanthum* (Daun Salam) Effects on Blood Pressure Decrease of Patients with Post Stroke**

Trio Gustin Rahayu
STIKes Faletahan Serang, Banten, Indonesia
Telp. (0254) 232 729, 230 054

ABSTRACT

Introduction

Proportion of stroke patients who experienced hypertension is much as 97.7% greater when than no sufferers of hypertension. Hypertension can be treated with non-pharmacologic therapy using *Syzygium Polyanthum*. It contains flavonoids that work as natural antioxidants that have a function to prevent the occurrence of hypertension in the body.

Methods

The research uses pre-experimental one group pre-posttest design on hypertension patients in Community Health Centers of Panimbang Pandeglang, Banten with 30 samples. The research samples got blood pressure check before and after being given intervention. The intervention given in the form of decoction of *Syzygium Polyanthum* as much as one glass of 250cc and drinking 2 times a day (morning and afternoon) each half a glass for 10 days. The data were analyzed and tested by using dependent t-test statistical test.

Results

The result of this research showed that after giving intervention of *Syzygium Polyanthum*, the diastolic blood pressure p value is 0,004 and systolic blood pressure p value is 0,001. There is the influence of systolic and diastolic pressure before and after intervention. The content of flavonoids in the *Syzygium Polyanthum* as a natural antioxidant has a function to prevent the occurrence of oxidation in the body cells. The higher the oxidation, riskier the degenerative diseases

Conclusions

Syzygium Polyanthum can lower blood pressure in stroke patients. For further research of *Syzygium Polyanthum*, the researchers should look for proper references of dosage that fit in making decoction of *Syzygium Polyanthum* as herbal medicine to overcome hypertension.

Keywords

Hypertension; Stroke; *Syzygium Polyanthum*

BACKGROUND

Stroke is the leading cause of death and disability in many countries. By 2013 globally there are almost 25.7 million survivors, 6.5 million have deaths and 113 million people with stroke, and 10.3 million new cases of stroke (Feigin VL et al, 2016). According to WHO data, worldwide about 972 million people or 26.4% of people worldwide are suffering from hypertension, This figure is likely to increase to 29.2% in 2025. Of 972 million people with hypertension, 333 million are in developed countries and the remaining 639 are in developing countries, including Indonesia (Yonata, A., Satria, A. 2016)

The number of stroke patients in Indonesia in 2013 based on the diagnosis of health workers is estimated to be 1,236,825 people (7.0 ‰), whereas based on diagnosis symptoms are estimated as 2,137,941 people (12,1‰) (Ministry of Health Republic Indonesia, 2013). Proportion of stroke patients who experienced hypertension as much (97.7%) more great when compared with no sufferers hypertension (Laily SR, 2017)

Hypertension or high blood pressure is an increase in systolic blood pressure of more than 140 mmHg and diastolic blood pressure of more than 90 mmHg in two measurements with an interval of five minutes in a rest or quiet state. Long-term persistent (persistent) blood pressure can cause damage to the kidneys (kidney failure), heart (coronary heart disease) and brain (causing stroke) if not detected early and receive adequate treatment. Many hypertension patients with uncontrolled blood pressure and the number continues to increase (Data center and information ministry of health republic Indonesia, 2013)

Hypertension can be overcome in two ways there are pharmacology and non pharmacology therapy. Pharmacology management is by using chemical drugs. non pharmacology treatment is complementary therapy (Yuliani, 2013). One way of non pharmacology treatment for hypertension is to consume herbal plants that are believed to be able to lower high blood pressure. One example of herbal is the *Syzygium Polyanthum*.

The results showed that the decrease in systolic blood pressure value after being given a decoction of *Syzygium Polyanthum* with the average value of systolic blood pressure 126.43 mmHg and the average value of diastolic blood pressure 80.18 mmHg. So it can be concluded that there is influence of decoction of *Syzygium Polyanthum* to decrease blood pressure in patient of hypertension (Yulianti TS, Setyaningsih R, Suryaningsih M, 2014).

Mean changes in blood pressure systolic pre-test and post-test of patients with hypertension is 40.00 mmHg with standard deviation 9428 mmHg. Average changes in blood pressure diastolic pre-test and post-test of hypertension patients was 20.00 mmHg with standard deviation of 9,428 mmHg. The effect of the water of *Syzygium Polyanthum* on blood pressure in hypertension patients in the intervention group Public Health Center of Sungai Bungkal in Kerinci at 2016 and no significant changes in blood pressure in the control group (Daftriani P, 2016)

Referring to the conditions mentioned above, the researcher is interested to know the effect of giving *Syzygium Polyanthum* to the decrease of blood pressure in Panimbang Community Health centers Pandeglang Banten. The purpose of this study was to study the effect of giving *Syzygium Polyanthum* to the decrease of blood pressure in Community Health centers of Panimbang Pandeglang Banten

METHODS

This research uses Pre Experimental One Group Pre-Post Test design. The population is hypertension patients in the Community Health Centers of Panimbang Pandeglang Banten, with a sample size of 30 obtained by total sampling technique. The independent variable in this study is the provision of *Syzygium Polyanthum*, while the dependent variable is blood pressure including blood pressure (systolic and diastolic) and pulse. This research was conducted at Community Health Centers of Panimbang on November until December 2017 for two weeks. Research subjects before being given intervention first measured blood pressure. Intervention given in the form of decoction of *Syzygium Polyanthum* as much as one glass of 250cc (glass of starfruit), and in drinking 2 times a day (morning and afternoon) each half a glass on the respondent for 10 days and then done post test in the form of measurement blood pressure at the end of the treatment. Instruments used in this study are mercury manometers, stethoscopes and watches. The data obtained were analyzed and tested by using Dependent t-Test statistic test with degree of significance $\alpha \leq 0,05$.

RESULT

Table 1. Frequency Distribution of Respondents by Age

Characteristic	Mean	SD	Min - Maks
Age	57.43	9.19	40 - 78

Table 2. Frequency Distribution of Respondents by Sex

Characteristic	n	%
Male	13	43.3
Female	17	56.7

Table 3. Average Respondents Based on Pretest Systolic and Diastolic Blood Pressure

Blood pressure	Mean	SD	Min - Maks
Sistolic	157.67	25.41	120 - 210
Diastolic	96.67	16.66	80 - 140

Table 4. Average Respondents Based on Postest Systolic and Diastolic Blood Pressure

Blood pressure	Mean	SD	Min - Maks
Sistolic	149	22.29	110 - 200
Diastolic	91.67	13.66	80 - 140

Table 5. Mean Systolic Blood Pressure and Diastolic Blood Pressure Before and After giving *Syzygium Polyanthum*

Variable	Mean	SD	95%CI	P Value
Sistolic pre test dan post test	8.667	13.38	3.66 - 13.66	0.001
Siastolic pre test dan post test	5.000	12.79	2.22 - 9.77	0.004

DISCUSSION

Based on Table 1 and Table 2 it can be seen that the average age of respondents is 57 years with the youngest age is 40 years old and the oldest age is 70 years. While the largest percentage of respondents are female sex is 56.7% and men 43.4%

Table 3 shows that the mean systolic blood pressure before the intervention of decoction of *Syzygium Polyanthum* is 157.67 with the lowest blood pressure value 120 and the highest blood pressure 210. While the average diastolic blood pressure before the intervention is 96.67 with the lowest blood pressure value 80 and highest blood pressure 140.

Table 4 shows that the mean systolic blood pressure after intervention of bay leaves is 149 with the lowest blood pressure value 110 and the highest blood pressure 200. While the mean diastolic blood pressure after intervention is 91.67 with the lowest blood pressure value 80 and highest blood pressure 140

Table 5 shows that the effect of systolic and diastolic blood pressure before and after the decoction of *Syzygium Polyanthum* to 30 respondents obtained mean systolic blood pressure is 8.667 mmHg with SD 13.38 mmHg and average diastolic blood pressure 5.000 mmHg with SD 12.79 mmHg. With statistical test of T-Test systolic blood pressure of pre test and post test got p-value 0,001 mean there is influence between systolic blood pressure of hypertension patient before and after given decoction of *Syzygium Polyanthum*. And from statistical test T-Test diastolic blood pressure pre test and post test obtained p-value 0,004 mean there is influence between diastolic blood pressure of hypertension patient before and after given decoction of *Syzygium Polyanthum*

The results of this study in accordance with the research Yulianti TS, Setyaningsih R, Suryaningsih M (2014) showed that the decrease in systolic blood pressure value after the decoction of *Syzygium Polyanthum* with the average value of systolic blood pressure 126.43 mmHg and average value of diastolic blood pressure 80.18 mmHg. There is influence of decoction of *Syzygium Polyanthum* to decrease blood pressure in hypertension patient at Dukuh Jangkung Rejo Nogosari Boyolali

The results of Trisna E and Sulistianingsih E (2015) showed that average cholesterol levels in hypertensive patients before drinking boiled water (*Syzygium polyanthum*) for 7 days was 209,74 mg/dl with standard deviation 23,76 mg/dL, while in patients with hypertension after drinking water boiled *Syzygium Polyanthum* for 7 days average cholesterol level is 191,30 mg/dl with standard deviation 23,51 mg/dl. The average cholesterol level in hypertension patients before drinking boiled water (*Syzygium polyanthum*) for 7 days was 209,74 mg/dl with standard deviation 23,76 mg/dl, whereas in hypertension patient after drinking boiled water of *Syzygium Polyanthum* for 7 day average cholesterol level was 191,30 mg/dl with standard deviation 23,51 mg/dl. There is a significant influence between cholesterol levels in patients with hypertension before and after drinking water boiling bay (*Syzygium polyanthum*) for 7 days.

The laurel leaves contain active compounds in which they provide good health benefits. The content inside the *Syzygium Polyanthum* is an essential oil containing citral compounds, sesquiterpenes, lactones, augenols and also phenols. It also contains saponins, triterpenes, flavonoids, tannins, polyphenols and alkaloids. The content of flavonoids contained in the leaves in functioning as a natural antioxidant that has a function to prevent the occurrence of oxidation in the body cells. If the higher the oxidation of cells in the body, the higher the risk of degenerative diseases. So that the content of flavonoids contained in *Syzygium Polyanthum* can prevent such as hypertension, lower cholesterol, lower blood sugar levels and lower uric acid

Study Limitations

The limitation of this study is that there is no definite dose in making the decoction of *Syzygium Polyanthum* so that each respondent is allowed to consume with different portion. In addition, researchers also did not add confounding variables such as drug consumption from a doctor.

CONCLUSIONS

The conclusions of this study were systolic blood pressure before 157.67 mmHg liquefied leaf stew and diastolic blood pressure averaged 96.67mmHg. While systolic blood pressure after stewed *Syzygium Polyanthum* average 149mmHg and diastolic blood pressure averaging 91.67 mmHg

Suggestion in this research is expected to further researcher can look for proper reference to dosage that fit in making decoction of *Syzygium Polyanthum* as herbal medicine to overcome hypertension and the necessity to do research of other herbal medicine to lower blood pressure

REFERENCE

1. Dafriani P. 2015. *Pengaruh Rebusan Daun Salam (Syzigium Polyanthum Wight Walp) Terhadap Tekanan Darah Pasien Hipertensi Di Sungai Bungkal, Kerinci*. Jurnal Medika Saintika Volume 7, Nomor 2, Desember 2016 E-ISSN : 2540-9611 | P-ISSN : 2087-8508
2. Feigin VL et al. 2016. *Global burden of stroke and risk factors in 188 countries during 1990-2013: a systematic analysis for global burden of disease study 2013*. Lancet Neurol 2016; 15: 913–24 Published Online June 9, 2016. [http://dx.doi.org/10.1016/S1474-4422\(16\)30073-4](http://dx.doi.org/10.1016/S1474-4422(16)30073-4)
3. Laily, SR. 2017. *Relationship Between Characteristic And Hypertension With Incidence Of Ischemic Stroke*. Jurnal Berkala Epidemiologi, Volume 5 Nomor 1, Januari 2017, Hal. 48-59
4. Ministry of Health Republic Indonesia. 2013
5. Trisna E, Sulistianingsih E. 2015. *Pengaruh Daun Salam Terhadap Penurunan Kadar Kolesterol Pada Penderita Hipertensi Di Wilayah Kerja Puskesmas Raja Basa Indah Kota Bandar Lampung*. Jurnal Analis Kesehatan: Volume 4, No. 1, Maret 2015
6. Yonata, A., Satria, A. 2016. *Hipertensi Sebagai Faktor Pencetus Terjadinya Stroke*. Majority Vol. 5 No. 3.
7. Yuliani,I. 2013.*Healing The Heart ; Integrating Complementary Therapies And Healing Practice Into The Care Of Cardiovascular Patient*. Progress In Cardiovascular Nursing America : Springer Publishing Companies Inc.
8. Yulianti TS, Setyaningsih R, Suryaningsih M. 2014. *Pengaruh Air Rebusan Daun Salam terhadap Penurunan Tekanan Darah pada Penderita Hipertensi di Dukuh Jakung Rejo Nogosari Boyolali*. KOSALA” JIK. Vol. 2 No. 2 September 2014