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# The Effect of Temulawak and Ginger on Changes in Blood Pressure in Pregnant Women and Pain Reduction in Labouring Women in BPM Suryani North Padang Lawas Regency

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**ABSTRACT**

Hypertension in pregnancy has a significant impact on maternal and fetal health. It can lead to complications such as placental abruption, organ failure, intravenous coagulation, preeclampsia, preeclampsia to become eclampsia, risk of intrauterine development, premature birth and intrauterine death. The treatment of gestational hypertension may be either pharmacological or non-pharmacological in nature. Non-pharmacological therapy for the treatment of hypertension in pregnancy may employ the use of ginger and temulawak. This study was conducted at BPM Suryani. The population comprised all pregnant women at BPM Suryani, numbering 154. The sample consisted of pregnant women with gestational hypertension, numbering 34. The recommended dose of dried temulawak and ginger is 25 grams, boiled in 200 ml of water until 100 ml of boiled water is obtained. The boiling time is 2-5 minutes. The temulawak and ginger are administered once a day for one week. At the outset of the study, the blood pressure of pregnant women with gestational hypertension was ascertained. Following the administration of temulawak and ginger, the respondents were again subjected to monitoring of their blood pressure. The data were analysed using a statistical test, namely the t-test, which is a paired sample t-test. A significant relationship was observed between systolic and diastolic blood pressure values before and after the administration of temulawak and ginger (p-value <0.05). The average difference in systolic blood pressure before and after the intervention was 5.82 mmHg with a p-value on systolic blood pressure of the p-value was 0.000 (p-value <0.05) for systolic blood pressure and 0.026 (p-value <0.05) for diastolic blood pressure. These findings suggest that the content of temulawak and ginger can be used in reducing blood pressure in pregnant women with gestational hypertension.

***Keywords:*** *temulawak, ginger, hypertension*



## 1. INTRODUCTION

Pregnancy is a natural process whereby sperm and eggs meet and undergo fertilization and implantation. A typical pregnancy can last for 40 weeks (Walyani, 2015). In midwifery services, the protection and maintenance of maternal health during the perinatal period are of paramount importance. One of the conditions that require close monitoring is hypertension (Manuaba, 2015). In 2015, Indonesia's maternal mortality rate (MMR) was 305 per 100,000, ranking 14th in the ASEAN region. The primary causes of maternal mortality during pregnancy are hemorrhage, infection, and hypertension, which can precipitate seizures and poisoning during gestation. (Fitriahadi, 2019) Gestational hypertension is observed in approximately 5% of all pregnancies. Hypertension during pregnancy is classified into chronic hypertension, preeclampsia, eclampsia, and gestational hypertension (Karthikeyan & Lip, 2007). Gestational hypertension was defined as hypertension experienced by pregnant women at >20 weeks of gestation in the absence of a previous history of hypertension. Pregnant women with gestational hypertension were defined as those whose blood pressure exceeded 140/90 mmHg, with no evidence of protein in the urine (Ministry of Health of the Republic of Indonesia, 2017). The etiology of gestational hypertension encompasses a range of factors, including maternal genetic history, age, history of gestational hypertension, parity, and interval between pregnancies. Gestational hypertension is the most dangerous pregnancy complication and primary cause of maternal mortality in

primiparous and multiparous pregnancies. This is because of the increased physiological stress experienced during childbirth in primiparous and multiparous pregnancies, which can lead to elevated blood pressure during pregnancy (Rambe, 2019). Gestational hypertension has adverse effects on both the mother and the fetus, including placental abruption and organ failure. The potential complications of gestational hypertension include intravenous coagulation, pre-eclampsia, pre-eclampsia with eclamptic seizures, an increased risk of intrauterine growth restriction and premature birth (before 37 weeks), and intrauterine death due to placental hypoperfusion and fetal injury (Basri et al., 2018). The treatment of hypertension during pregnancy may be pharmacological or non-pharmacological. Medical treatment with antihypertensive medications. The initial treatment options were labetalol, hydralazine or nifedipine. Nifedipine is the recommended oral treatment option for the acute phase. Currently, nifedipine or labetalol is frequently selected as outpatient treatment (Luger RK, 2022). In the context of pregnancy, the use of medications should be minimized to avoid potential adverse effects on the developing fetus. Non-pharmacological therapies for the treatment of hypertension during pregnancy may include the use of ginger and ginger derivatives. In a 2007 study, Rozanna observed that the phenomenon of returning to nature captured the global public's attention. The safety of traditional medicine is based on the premise that it is derived from natural sources and has a long history of use (Harmanto, 2013). A study conducted by Velicia V.T. Djen on the effect of ginger extract (Zingiber officinale) on 10 hypertensive patients in the working area of the Batua Health Centre in Makassar City indicated a reduction in blood pressure after two weeks of ginger extract administration. Ginger enhances blood circulation and maintains low blood pressure (Muliani, 2021). Temulawak rhizome contains yellow curcumin, essential oil, starch, protein, fat (fixed oil), cellulose, and minerals (Sari et al.). Temulawak rhizome is a widely used traditional remedy in Indonesia. It is believed to have a number of beneficial effects, including increasing appetite, improving digestive function, maintaining healthy liver function, relieving joint and bone pain, lowering blood fat (cholesterol), acting as an antioxidant, and inhibiting blood clots. Additionally, it has been shown to have pharmacological effects due to the presence of active substances, including germacron, which has been demonstrated to have anti-inflammatory properties and to inhibit edema or swelling (Ef Affah, 2004).

## 2. METHOD

In this study. This research design was a quasi-experiment with a one-group pre-test and post-test. In this research plan, there is no comparison group, but observations are made first (pre-test), which allows researchers to test the changes in respondents after treatment (Setiadi, 2013). This study was conducted at BPM Suryani, the population in this study were all pregnant women at BPM Suryani as many as 154 pregnant women and the sample in this study were pregnant women with gestational hypertension as many as 34 people. The dose of dried temulawak and ginger used to lower blood pressure levels was 25 boiled in 200 ml of water until 100 ml of boiled water was obtained (Badan POM RI, 2005). The duration of boiling temulawak and ginger for 2-5 minutes, temulawak, and ginger was given once a day for one week. At the beginning of the study, the blood pressure of the pregnant women with gestational hypertension was determined. After being administered temulawak and ginger, the respondents were again monitored for blood pressure. The data analysis technique used to test the hypothesis is a statistical test, namely the t-test, which is a paired sample t-test. Research ethics use principles that respect the dignity of respondents, where respondents receive an explanation of the research, and each respondent fills out informed consent for willingness to be involved in research. This study also upholds the principles of confidentiality of the identity and data of respondents and the benefits for respondents.

## 3. RESULTS AND DISCUSSION

Differences in pre- and post-BP reduction of Temulawak and ginger in pregnant eomen with gestational hypertension.

Table 1. The results showed a significant relationship between systolic and diastolic blood pressure before and after giving temulawak and ginger

| Blood pressure | mean | | Mean Different | Std.deviation | t | p-value |
|---|---|---|---|---|---|---|
| | sebelum | sesudah | | | | |
| sistol | 147,27 | 141,45 | 5,82 | 2,601 | 7,420 | 0,00 |
| diastol | 95,91 | 92,73 | 3,18 | 4,045 | 2,609 | 0,026 |

The results showed a significant relationship between systolic and diastolic blood pressure before and after giving temulawak and ginger (p-value <0.05), the average difference in systolic blood pressure before and after the procedure was 5.82 mmHg with a p-value of systolic blood pressure of 0.000 (p-value <0.05) and the average difference in diastolic blood pressure before and after the procedure was 3.18 mmHg with a diastolic pressure p-value of 0.026 (p-value <0.05).

**Discussion**

Hypertension is cause by increased blood volume, decreased elasticity of blood vessels, and increased blood cholesterol levels, which also affect blood pressure spikes. Increased cholesterol narrows blood vessels and decreases blood vessel elasticity. According to Permadi, lowering blood pressure can be achieved with diuretics, antidiuretics (reducing the production, secretion, and effectiveness of adrenal hormones), and vasodilators (relaxing blood vessel muscles). If the blood vessels widen, the blood flow becomes smoother so that the workload of the heart in pumping blood can be reduced) full of blood and thus reduce high blood pressure and reduce blood vessels (Permadi, 2008). According to Rahardjo (2005), temulawak stew at 1x and 10x the normal human dose in white rats has a diuretic effect of about half that of HCT (Hydrochloroazide) 1.6 mg/kg (Rahardjo, 2005). According to Afifah (2003), temulawak can prevent swelling or edema, temulawak extract can also reduce blood cholesterol and triglycerides and prevent blood clots, thus overcoming the blockage of arterial blood pressure and ultimately reducing blood pressure (Afifah, 2003). In this study, the effect of temulawak included a diuretic effect, because some respondents complained of frequent urination, but this diuretic effect did not cause dehydration in respondents. This can cause a decrease in blood pressure. Ginger is beneficial to the cardiovascular system as it increases the flow of body fluids and, stimulates circulation throughout the body. Increased blood flow can stimulate cellular metabolism to reduce spsms and has antioxidant effects. In addition, ginger reduces the production of prostaglandinE2 (PGE2) and thromboxane, thereby lowering blood pressure. Ginger helps lower blood pressure by blocking voltage-gated calcium channels (Ghayur et al., 2005) endothelium-dependent and independent vasodilator and cardio-suppressant, and stimulant effects of its aqueous extract (Zo.Cr., 2005). Ginger can also lower blood pressure by inhibiting ACE activation (Al-Azzawie, Aziz, & Ruaa, 2014). Ginger has the potential to prevent risk factors for hypertension and hyperlipidaemia (Sanghal et al., 2012) Ginger can also prevent calcium from causing smooth muscle contractions in organs and arteries. It reduces contraction, causing relaxation of the muscles and arterial walls, allowing blood flow to stabilize and decrease blood pressure to decrease (Satyanand et al., 2013). In addition, ginger can reduce blood cholesterol leves, thereby reducing the risk of heart disease (Al-azzawie et al., 2014).

## 4. CONCLUSION

The optimum yield of temulawak rhizomes per hectare of 38.13 tonnes ha-1 was obtained in temulawak planted in teak stands at the age of 3 years with J1 planting spacing. The optimum quality (antioxidant activity level) of temulawak was obtained in temulawak planted under a 17-year-old teak shade with J4 planting spacing and an antioxidant activity level of 93.54%. The efficiency of light intensity was higher in temulawak planted in 17-year-old teak stands. Based on the existing research, it can be concluded that the combination of ginger and temulawak as a health drink increases antioxidant activity, increases total phenolics, and relieves menstrual pain.


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