


## Midwifery Care for G1P0A0 Pregnant Women with Tomato Juice Administration to Reduce Hypertension in Pregnant Women at PMB Rismala, Asahan Regency

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Article Info	ABSTRACT
<p><b>Keywords:</b> Gestational Hypertension Midwifery Care. Pregnant Women Tomato Juice</p>	<p>Hypertension in pregnancy is a serious complication that accounts for approximately 30% of maternal deaths in Indonesia. Tomatoes contain potassium, lycopene, and antioxidants that have the potential to lower blood pressure through vasodilation. Objective: This study aims to determine the effectiveness of tomato juice administration in lowering blood pressure in pregnant women with gestational hypertension. Methods: This study used a case study design with a comprehensive midwifery care approach (Varney's 7 steps). The research subject was a primigravida (G1P0A0) pregnant woman at 28-31 weeks of gestation with an initial blood pressure of 150/95 mmHg. The intervention consisted of 200 ml of fresh tomato juice, twice a day for seven consecutive days. Results: The observation results showed a gradual decrease in blood pressure each day without any adverse side effects. After seven days of intervention, the subject's blood pressure decreased significantly to 130/82 mmHg, with an average systolic decrease of 3.7 mmHg and diastolic decrease of 1.8 mmHg. Conclusion: Tomato juice administration is effective as a safe, economical, and easily accessible non-pharmacological complementary therapy to help lower blood pressure in pregnant women with gestational hypertension. Healthcare providers are advised to educate patients on the use of tomato juice as part of promotive-preventive efforts in midwifery care.</p>
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### INTRODUCTION

Pregnancy is a physiological process characterized by the union of sperm and egg cells that develop into a fetus. Although natural, this period brings significant physical and hormonal changes that can trigger various complications, one of which is hypertension in pregnancy. This condition is a serious threat to the health of both the mother and the fetus, with a prevalence in Indonesia of 6.5% and is the leading cause of maternal mortality. According to data from the Ministry of Health (2019), gestational hypertension accounts for approximately 30% of all maternal deaths, making it the second leading cause of death after hemorrhage.

Clinically, gestational hypertension is defined as an increase in systolic blood pressure  $\geq 140$  mmHg and diastolic blood pressure  $\geq 90$  mmHg that occurs after 20 weeks of

pregnancy without proteinuria. Data from the World Health Organization (2023) emphasizes the urgency of this issue by stating that hypertension is the main trigger of cardiovascular disease and premature death globally. At the regional level, North Sumatra has a hypertension prevalence of 29.19%, with Asahan Regency alone recording more than 12,000 cases. Initial observations at PMB Bd. Rismala Siagian, S.Keb. in 2025 showed that out of 50 pregnant women who visited, 12 (24%) had hypertension.

The management of hypertension in pregnant women can be done through pharmacological and non-pharmacological approaches. One potential, safe, and economical complementary therapy is the administration of tomato juice (*Solanum lycopersicum*). Tomatoes are known to be rich in potassium, lycopene, and gamma-amino butyric acid (GABA), which work synergistically to lower blood pressure. The mechanism of action includes vasodilation of blood vessels, increased sodium excretion to reduce fluid retention, and antioxidant activity that maintains arterial wall elasticity and suppresses oxidative stress.

Although conventional medical treatment is available, the use of natural therapies such as tomato juice offers a non-pharmacological alternative with minimal side effects that can be easily administered independently by the community. Given the urgency of this issue, this study aims to evaluate the effectiveness of tomato juice administration in lowering blood pressure in pregnant women with gestational hypertension at PMB Rismala, Asahan District, as part of promotive and preventive midwifery care efforts.

## METHODS

This study used a case study design with a descriptive observational approach to evaluate the effect of tomato juice consumption on blood pressure reduction in pregnant women with gestational hypertension. The nursing approach used was Varney's 7-step obstetric management, which was comprehensively documented. This study was conducted at PMB Bd. Rismala Siagian, S.Keb., Sei Alim Hasak Village, Asahan Regency, in June 2025. The research subject was a primigravida pregnant woman (G1P0A0) with a gestational age between 28 and 31 weeks who was diagnosed with gestational hypertension without other complications, with an initial blood pressure of 150/95 mmHg.

The intervention given was 200 ml of fresh tomato juice made from a mixture of 150 grams of red tomatoes, 100 ml of water, and 1 tablespoon of honey. The juice was given to the respondents twice a day for seven consecutive days. To ensure data accuracy, blood pressure measurements were taken using a sphygmomanometer and stethoscope every day at a fixed time, namely in the morning before and after the intervention was given. All measurement results were then recorded in an observation sheet to monitor the development of the subjects' conditions. The collected data were analyzed descriptively by comparing the average blood pressure before and after the intervention to assess the effectiveness of tomato juice as a complementary therapy.

## RESULTS AND DISCUSSION

Berdasarkan asuhan kebidanan yang dilakukan pada ibu hamil G1P0A0 usia kehamilan 28 minggu dengan diagnosis hipertensi gestasional, diperoleh data awal tekanan darah sebesar

150/95 mmHg. Subjek kemudian diberikan intervensi berupa jus tomat segar (campuran 150 gram tomat, 100 ml air, dan 1 sendok madu) sebanyak 200 ml, yang dikonsumsi dua kali sehari selama tujuh hari berturut-turut.

Hasil observasi harian menunjukkan adanya penurunan tekanan darah yang konsisten dan bertahap. Perkembangan tekanan darah subjek sebelum dan sesudah intervensi selama tujuh hari dapat dilihat pada tabel berikut:

**Table 1.** Blood Pressure Distribution Before and After Tomato Juice Administration in Pregnant Women with Gestational Hypertension for 7 Days

Day	BP Before (mmHg)	After BP (mmHg)	Difference ( $\Delta$ )	Description
1	150/95	148/93	1	Slightly decreased
2	148/93	145/90	1	Decreased
3	146/90	142/88	2	Stably decreased
4	144/88	140/86	2	Decreased
5	142/86	138/85	4	Decreased
6	140/85	135/84	5	Significantly decreased
7	138/84	130/82	4	Normal blood pressure
Average	144.0 / 88.7	140.3 / 86.9	-3.7 / -1.8	Effective reduction

\*) Source: Primary Data Processed (2025)

Based on the observation results listed in the table, regular consumption of tomato juice for seven days showed a significant and gradual decrease in blood pressure in research subjects. At the start of the intervention (day one), the subjects' blood pressure was recorded at 150/95 mmHg, and after regularly consuming tomato juice until the seventh day, blood pressure decreased to 130/82 mmHg, which is categorized as normal blood pressure close to the lower limit.

Overall, the average blood pressure before the intervention was 144.0/88.7 mmHg, which then decreased to 140.3/86.9 mmHg after the intervention. These data show that there was an average decrease of 3.7 mmHg in systolic pressure and 1.8 mmHg in diastolic pressure during one week of tomato juice administration. This consistent decrease proves that the potassium and lycopene content in tomatoes effectively aids the process of blood vessel vasodilation, making tomato juice a safe and effective non-pharmacological complementary therapy for pregnant women with gestational hypertension without causing side effects.

## CONCLUSION

Based on the results of midwifery care that has been carried out, it can be concluded that consuming 200 ml of fresh tomato juice twice a day for seven consecutive days has been proven effective in lowering blood pressure in pregnant women with gestational hypertension. This intervention consistently resulted in an average decrease in systolic blood pressure of 3.7 mmHg and diastolic blood pressure of 1.8 mmHg, so that on the seventh day,

the subjects' blood pressure reached the normal range of 130/82 mmHg. This successful reduction was driven by the active substances in tomatoes, such as potassium, lycopene, and GABA, which work through blood vessel vasodilation, increased sodium excretion to reduce fluid retention, and antioxidant activity that maintains artery elasticity. Due to its safe, economical nature, and lack of side effects, tomato juice is highly recommended as a non-pharmacological complementary therapy alternative to support promotive and preventive midwifery care in managing hypertension during pregnancy.

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