

Case Report on Weight and Blood Pressure Monitoring in a Pregnant Mother with Grade I Obesity in the Third Trimester with Gestational Hypertension

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Submitted: August 4, 2026 -Revised: August 19, 2026 -Accepted: September 14, 2026 -Published: September 30, 2026

ABSTRACT

Pregnancy with obesity has become a pathological condition that carries the risk of triggering complications such as gestational hypertension. Hypertension still remains a complication that leads to high morbidity and mortality rates for both the mother and the fetus. In this case, the mother had grade I obesity even before pregnancy. Gestational hypertension occurred after 20 weeks of pregnancy, associated with low physical activity and a diet that was not in line with balanced nutrition. The uniqueness of this case lies in the use of a 24-hour food recall as a method for monitoring adherence to a low-salt and low-fat diet. The aim of this case report is to evaluate diet adherence, blood pressure, and body weight in a pregnant woman with grade I obesity and gestational hypertension. The case report was conducted on Mrs. "T", 29 years old, G1P00000, 35–36 weeks pregnant, pre-pregnancy BMI of 30.92 kg/m², and a blood pressure of 130/85 mmHg, using a case report method through a midwifery care approach with SOAP over two weeks. Care was provided by Midwife "D" and Student "S" in the working area of Puskesmas "P". Interventions included education on a low-salt and low-fat diet, monitoring 24-hour food recall, blood pressure, body weight, and recommendations for light physical activity. The patient's body weight decreased from 89.7 kg to 89.0 kg, and blood pressure improved from 135/92 mmHg to 124/80 mmHg. Dietary patterns also improved based on the 24-hour food recall, with no complications observed during the follow-up period. Monitoring using a 24-hour food recall, combined with nutritional education and dietary counseling, improved adherence to the prescribed diet and contributed to better control of blood pressure and body weight. The mother's condition remained stable, and the pregnancy progressed without complications.

Keywords: Obesity; Gestational Hypertension; Food Recall; Diet; Pregnant Women

INTRODUCTION

Obesity before pregnancy is an important maternal risk factor because it is associated with hypertensive disorders of pregnancy, gestational diabetes, cesarean birth, and other maternal and neonatal complications. Contemporary reviews emphasize that pregnancy in women with obesity requires individualized antenatal assessment, attention to gestational weight gain, and early recognition of complications rather than focusing only on weight reduction.^(1–4)

Hypertensive disorders of pregnancy are among the major causes of maternal and perinatal morbidity and mortality. Gestational hypertension is generally identified after 20 weeks of gestation in a previously normotensive woman and may progress to preeclampsia; therefore, repeated blood-pressure assessment and evaluation for warning signs are essential during the third trimester. Clinical guidance recommends continued surveillance for symptoms and laboratory or fetal findings that may indicate disease progression.⁽⁵⁾

The relationship between maternal adiposity and hypertensive disorders is supported by observational and systematic-review evidence. A systematic review of pregnancies complicated by obesity identified hypertensive disorders among the important adverse outcomes associated with maternal obesity, while a dose-response meta-analysis found that higher pre-pregnancy BMI is associated with increasing risk of hypertensive disorders of pregnancy.^(3,6) In women with obesity, gestational weight gain is also relevant. Multicenter cohort evidence indicates that gestational weight gain is associated with the risk of hypertensive disorders, supporting the need for regular weight monitoring rather than waiting until excessive gain becomes apparent.^(7,8)

Lifestyle management is an important component of antenatal care. Evidence from a large systematic review and meta-analysis of randomized trials indicates that structured dietary and physical-activity interventions can reduce gestational weight gain and improve several maternal outcomes.⁽⁹⁾ A systematic review of exercise interventions in women with overweight or obesity also found beneficial effects on pregnancy-related outcomes, while a separate meta-analysis reported that physical activity during pregnancy was associated with a lower risk of hypertensive disorders and modest reductions in systolic and diastolic blood pressure.^(10,11) For women without contraindications, walking and other moderate activities are commonly recommended, with intensity and duration individualized according to maternal and obstetric status.⁽¹²⁾

Dietary quality is another potentially modifiable factor. Reviews of dietary patterns during pregnancy suggest that patterns richer in vegetables, fruits, whole grains, legumes, fish, and vegetable oils and lower in refined foods are associated with more favorable pregnancy outcomes, although the certainty of evidence varies by outcome and population. Nutritional interventions have also been investigated for prevention of gestational hypertension and preeclampsia. Sodium reduction is relevant to blood-pressure control in the general population, and dietary counseling in pregnancy should emphasize an overall balanced pattern rather than severe dietary restriction.

The 24-hour food recall is useful for assessing recent dietary intake and can be repeated to identify changes in eating patterns after counseling. Validation research in pregnant women supports the use of 24-hour dietary recall as a dietary assessment method, although repeated recalls are preferable when estimating usual individual intake because daily intake varies. This makes repeated food recall particularly useful as a practical monitoring tool in a case report, where the purpose is to document behavioral change rather than estimate population-level nutrient intake.

Antenatal care provides the clinical setting for integrating these measures. WHO recommends regular antenatal contacts that include maternal and fetal assessment, counseling on healthy eating and physical activity, and timely detection of complications. In a woman with obesity and gestational hypertension, serial monitoring of blood pressure and weight, dietary counseling, and assessment of warning signs can therefore be integrated into individualized midwifery care. The present case is relevant because it documents a practical, non-pharmacological monitoring approach in a primary-care setting in Magetan, East Java, using repeated blood-pressure and weight assessment together with 24-hour food recall and health education.

The aim of this case report was to describe the short-term changes in body weight, blood pressure, dietary adherence, and health behavior in a 29-year-old pregnant woman with grade I pre-pregnancy obesity and gestational hypertension during the third trimester. The case specifically explores whether repeated monitoring and non-pharmacological counseling were accompanied by improved dietary behavior and more favorable blood-pressure and weight measurements during the reported care period.

Based on the issues above, this case is very important to be presented as a Case Report. In this Case Report, it is expected to provide insights to improve hypertension prevention and management programs in Magetan. This study was based on hypothesis: How is a Case Report of a pregnant mother in controlling blood pressure and weight during the third trimester as an effort to reduce gestational hypertension in obesity?

METHODS

Study Design

This study used a qualitative descriptive case-report design. The case was documented using a midwifery care approach and SOAP (Subjective, Objective, Assessment, Plan) documentation. The purpose was to describe the course of care and the observed changes in maternal weight, blood pressure, dietary behavior, and self-monitoring during the reported follow-up period.

Case and Setting

The case involved Mrs. "T", a 29-year-old primigravida (G1P00000) with a pre-pregnancy BMI of 30.92 kg/m², categorized as grade I obesity. The case was managed in the working area of Plaosan Community Health Center, Magetan Regency, East Java. The source manuscript reports the study period as 14–28 February 2026 and describes four follow-up assessments. The clinical record should be checked before submission to ensure that the gestational ages stated in all sections are internally consistent.

Data Collection

Data were collected from midwifery care documentation and follow-up assessments. Subjective data included symptoms or warning signs related to hypertensive complications, dietary practices, fluid intake, physical activity, and the patient's understanding of counseling. Objective data included body weight and blood pressure. The care plan included education on a balanced low-salt and low-fat diet, repeated 24-hour food recall, monitoring of weight and blood pressure, and advice regarding light physical activity according to pregnancy condition. The source case reports that blood pressure and weight were monitored over four visits.

Study Variables

The principal variables were body weight (kg), blood pressure (mmHg), dietary adherence based on 24-hour food recall, presence or absence of hypertensive warning symptoms, and the patient's ability to describe and apply the recommended lifestyle measures. Pre-pregnancy BMI was used to characterize the obesity status. No inferential statistical variables were defined because this was a single-patient case report.

Data Analysis

Data were analyzed descriptively by comparing the reported initial and final measurements and by summarizing changes in dietary behavior and self-monitoring. No statistical hypothesis testing was performed. Changes in blood pressure and weight were presented in a table and figures to make the clinical trajectory transparent. The observed changes were interpreted as case-level findings and not as evidence of treatment efficacy.

Ethical Consideration

The case was presented using the non-identifying patient label “T” to protect the patient’s privacy. The supplied manuscript does not include an ethical clearance number or documentation of written informed consent.

RESULTS

Baseline and Follow-up Findings

Mrs. “T” was a 29-year-old first-time pregnant woman with pre-pregnancy BMI 30.92 kg/m². During the reported care period, her body weight was 89.7 kg at the initial measurement and 89.0 kg at the final measurement. Blood pressure decreased from 135/92 mmHg to 124/80 mmHg. The patient remained compos mentis and did not report severe headache, visual disturbance, upper abdominal pain, or excessive swelling. She reported reducing high-salt and high-fat foods, increasing vegetables and fruits, drinking more water, and monitoring weight and blood pressure regularly.

Table 1. Summary of reported baseline and final case findings.

Indicator	Initial	Final	Observed change
Body weight	89.7 kg	89.0 kg	−0.7 kg
Systolic blood pressure	135 mmHg	124 mmHg	−11 mmHg
Diastolic blood pressure	92 mmHg	80 mmHg	−12 mmHg
Dietary behavior	Higher-salt/high-fat foods reported	Reduced high-salt/high-fat foods; more vegetables and fruits	Improved pattern reported
Self-monitoring	Monitoring initiated	Able to monitor weight and BP independently	Improved self-management

The reported dietary recalls showed a shift toward a healthier pattern after counseling, characterized by lower intake of high-salt and high-fat foods and greater intake of balanced foods. At follow-up, the patient was able to explain the principles of a balanced low-salt and low-fat diet, the importance of weight control, and the need for regular blood-pressure monitoring.

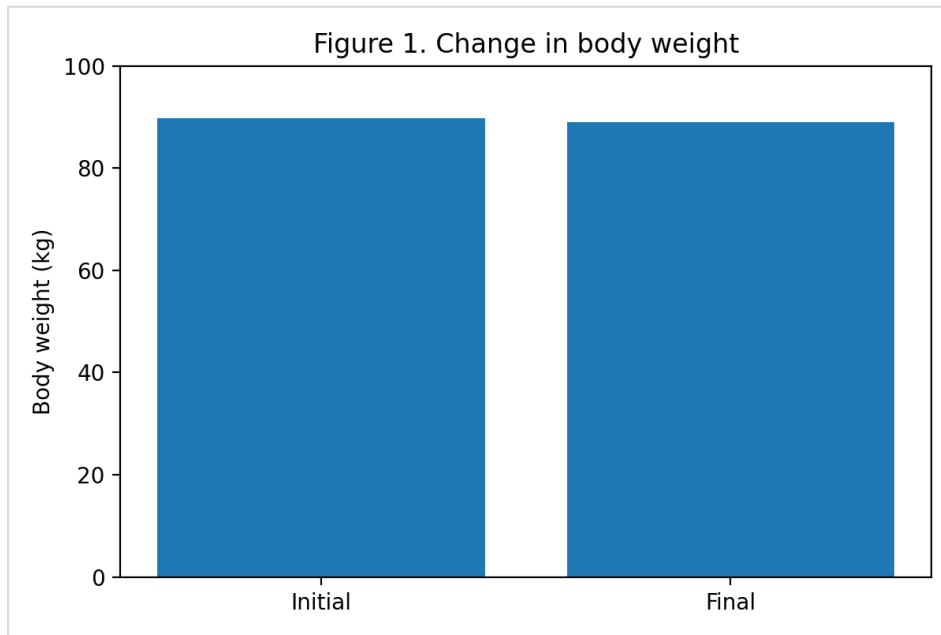


Figure 1. Change in body weight from the initial to final reported assessment.

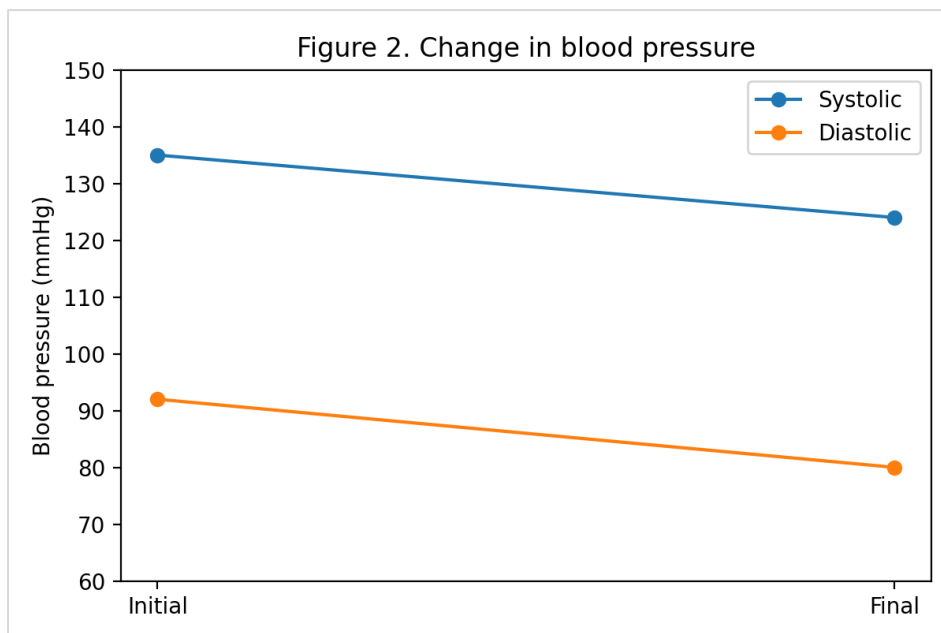


Figure 2. Change in reported systolic and diastolic blood pressure from the initial to final assessment.

DISCUSSION

The principal finding of this case was a short-term improvement in both blood pressure and body weight during the reported care period. Blood pressure decreased from 135/92 mmHg to 124/80 mmHg, while weight decreased by 0.7 kg. In a woman with pre-pregnancy grade I obesity, these findings are clinically relevant because obesity is consistently associated with a greater risk of hypertensive disorders and other pregnancy complications.^(3,4,6) However, because the report describes only one patient and has no control or untreated comparison period, the observed improvement should be interpreted as an association with the period of care rather than proof that counseling caused the change.

The patient's pre-pregnancy BMI of 30.92 kg/m² places her in the obesity category. Current guidance emphasizes individualized management of obesity in pregnancy, including assessment of gestational weight gain, nutritional counseling, and surveillance for pregnancy complications.⁽²⁻⁴⁾ The patient's decrease from 89.7 kg to 89.0 kg should therefore be interpreted in the context of fetal growth and overall maternal nutritional status. A small decrease over a short period is not, by itself, a treatment target in pregnancy. The priority is adequate nutrition and appropriate gestational weight gain while preventing excessive gain. ACOG summarizes the Institute of Medicine recommendation of a total gestational weight gain of approximately 5–9.1 kg for women who enter pregnancy with obesity.

The blood-pressure improvement is consistent with the importance of repeated monitoring and early recognition of deterioration. ACOG recommends continued surveillance in women with gestational hypertension because the condition may progress to preeclampsia. In this case, the absence of severe headache, visual disturbance, upper abdominal pain, and excessive swelling during follow-up was reassuring, although symptom absence alone cannot exclude disease progression. The case therefore supports the practical value of combining blood-pressure measurements with symptom assessment and routine antenatal surveillance.

Dietary counseling was a central component of the care plan. The patient reported reducing high-salt and high-fat foods and increasing vegetables and fruits. Systematic reviews suggest that dietary patterns emphasizing minimally processed foods, vegetables, fruits, whole grains, legumes, fish, and healthier fats are associated with more favorable pregnancy outcomes, although the strength of evidence differs across outcomes. Nutritional interventions have also shown potential to reduce the risk of gestational hypertension or preeclampsia, although effects vary by intervention and population. Therefore, the counseling in this case is better described as promotion of a balanced dietary pattern with attention to salt and fat intake rather than a restrictive weight-loss diet.

The use of repeated 24-hour food recall is another important feature of the case. A 24-hour recall can document recent food and beverage intake and can help health professionals identify behaviors that require further counseling. Validation research among pregnant women supports its usefulness, while research on repeated recalls indicates that several recall days may be needed to estimate usual individual intake accurately. In the present case, the method was used primarily to monitor behavioral adherence over time, which is appropriate for a case report, although the manuscript should avoid presenting the recall as a precise measure of usual nutrient intake unless portion sizes and nutrient calculations were systematically documented.

The recommendation for light physical activity also has an evidence base. A systematic review and meta-analysis of randomized controlled trials found that physical activity during pregnancy was associated with a lower risk of hypertensive disorders and modest reductions in systolic and diastolic blood pressure.⁽¹¹⁾ Another review focusing on women with overweight or obesity found beneficial effects of exercise interventions on several pregnancy outcomes.⁽¹⁰⁾ ACOG recommends regular moderate physical activity for most pregnant women without contraindications, while emphasizing individual clinical assessment.⁽¹²⁾ In this case, activity advice was appropriately framed as light activity according to pregnancy condition rather than intensive exercise.

The combined use of dietary counseling, activity advice, and self-monitoring is also supported by broader intervention evidence. A meta-analysis of 117 randomized trials involving more than 34,000 women found that antenatal diet and physical-activity interventions were associated with lower gestational weight gain and improvements in several maternal outcomes.⁽⁹⁾ A more recent randomized trial among women with gestational hypertension reported that a nurse-led lifestyle intervention was associated with reductions in systolic and diastolic blood pressure and lower rates of several adverse outcomes, although that study used a larger sample and a structured digital intervention, so its results should not be directly generalized to this single case.

The case also illustrates the role of antenatal care as a platform for prevention and early detection. WHO recommends regular antenatal contacts that integrate maternal and fetal assessment, health education, nutrition counseling, and physical-activity advice. For women with obesity and gestational hypertension, continuity of care is particularly important because blood pressure, weight, symptoms, fetal growth, and other clinical findings may change during the third trimester. The ability of the patient to repeat the counseling points and perform self-monitoring suggests improved engagement with care, but this should be interpreted as a behavioral outcome rather than a clinical endpoint.

The reduction in blood pressure observed in this case is encouraging but cannot be separated from natural variability, measurement conditions, rest, adherence to care, or other unmeasured factors. Likewise, the 0.7-kg weight reduction may reflect fluid shifts, dietary changes, or normal short-term variation. The study's major strength is the practical integration of repeated assessment with individualized education in a primary-care setting. Its main limitations are the single-case design, short follow-up, absence of a comparator, lack of detailed

nutrient calculations from the food recalls, and incomplete documentation of ethical approval/consent in the supplied manuscript. These limitations should be explicitly acknowledged to avoid overstating the effect of the intervention.

CONCLUSION

Based on the midwifery care results for Mrs. "T," a 29-year-old woman, G1P00000, at 36 weeks and 4 days of pregnancy with gestational hypertension and grade I obesity in the working area of Plaosan Health Center, Magetan Regency, over the past two weeks, it can be concluded that the mother had a primary risk factor in the form of pre-pregnancy obesity, which contributed to the occurrence of gestational hypertension. The results of the subjective assessment conducted during care showed that the mother increased her knowledge about gestational hypertension and obesity, was able to explain back the principles of a low-salt, low-fat balanced diet, understood pregnancy warning signs, and showed compliance with dietary recommendations based on daily food recall results. She also started to routinely do light physical activity and was able to monitor her blood pressure and weight on her own.

Acknowledgement

The authors would like to express their sincere appreciation to the respondent. The authors also thank all parties who provided support and assistance during the research process and manuscript preparation.

Competing Interests

All the authors declare that there are no conflicts of interest.

Funding Information

No funds were received for this study.

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