Midwifery Care of Pregnancy in Pregnant Women with Anemia

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Abstract:

Pregnancy anemia is a condition where the hemoglobin level in the blood falls below normal due to a decrease in the number of erythrocytes or hemoglobin, thereby reducing the blood's ability to carry oxygen to the vital organs of the mother and fetus. This study aims to determine the effectiveness of combining iron (Fe) tablets and dates in addressing anemia. This research uses a case study approach to explore a deep phenomenon within clearly defined boundaries. Data were comprehensively collected from various sources and documented using the SOAP method (Subjective, Objective, Assessment, Plan), providing a complete understanding of the case involving the respondent. The primary focus of this study is on the phenomena arising from complaints and examination results during the period of midwifery care. The study was conducted on Mrs. DN at 38 weeks of gestation with moderate anemia, and the intervention provided consisted of consuming Fe tablets and seven dates per day for 14 days. The 2-week intervention showed successful outcomes for moderate pregnancy anemia, with an increase in hemoglobin levels from 9.2 g% to 9.9 g%. The case analysis established that Mrs. DN had moderate anemia at 38 weeks gestation. This study concludes that combining Fe tablets and seven dates per day for 14 days is effective as an intervention for managing moderate pregnancy anemia.

INTRODUCTION

Anemia is characterized by inadequate red blood cells to fulfill the body's physiological demands. While iron deficiency is the most frequent cause, anemia may also result from other factors, including a lack of key nutrients such as folate, vitamin B12, and vitamin A; the presence of acute or chronic inflammation; parasitic infections; and genetic or acquired disorders that impair hemoglobin production, red blood cell formation, or reduce the lifespan of red blood cells Anemia during pregnancy is identified by hemoglobin levels falling below 11 g/dL in the first trimester and under 10.5 g/dL in the second and third trimesters (Noshiro et al., 2022; Febriani et al., 2024). Iron deficiency anemia in pregnant women is typically indicated by several markers, including a serum ferritin concentration of less than 15–30 µg/L, hemoglobin levels below 11 g/dL, and a hematocrit value lower than 33% (Benson et al., 2022).

Recent WHO data show that 40.08% of pregnant women worldwide experience anemia. Regions with the highest prevalence include Southeast Asia (48.15%), Africa (46.16%), and the Eastern Mediterranean (40.91%). The lowest prevalence is found in the Americas, at 25.48% (Agarwal & Rets, 2021). The prevalence of anemia in pregnant women is recorded at 3.8% in the first trimester, increases to 13.6% in the second trimester, and reaches 24.8% in the third trimester.

Because of the increased need for iron during pregnancy, approximately 75% of pregnant women experience iron deficiency or anemia (IDA) in the third trimester (Benson et al., 2022).

Anemia in pregnancy is recognized as an independent risk factor that can lead to numerous complications for both the mother and the baby. These complications include the need for blood transfusions, postpartum bleeding, cesarean delivery, hysterectomy, premature birth, and a heightened risk of infections (Saputri et al., 2021; Carolin et al., 2023). This condition impacts around 32 million pregnant women globally. In developing nations, the prevalence of anemia among expectant mothers can be as high as 56%. Anemia during pregnancy poses significant health risks for both mother and child. It is linked to adverse outcomes such as premature birth, low birth weight, reduced Apgar scores, neonatal anemia, and a range of complications affecting multiple body systems, including delayed brain development, behavioral issues, and respiratory problems (Zhang et al., 2022; Setiyarini & Dewi, 2025).

Anemia can be addressed by taking dates and iron (Fe) supplements. Dates are recognized as a nutrient-dense and energy-rich fruit with a well-balanced nutritional profile. They provide essential nutrients such as carbohydrates, tryptophan, omega-3 fatty acids, vitamin C, vitamin B6, and important minerals like calcium (Ca^{2+}), zinc (Zn), and magnesium (Mg). Additionally, dates are high in dietary fiber and contain other beneficial minerals, including potassium, manganese, phosphorus, iron, sulfur, and magnesium, making them highly recommended for pregnant women (Saputri et al., 2021).

Iron supplementation is recommended for conditions involving iron deficiency, which may result from factors such as iron deficiency anemia, iron deficiency without anemia, inadequate nutrient intake, poor absorption, chronic inflammation, blood loss, or an increased physiological need for iron (Nguyen & Tadi, 2025; Ferasinta & Dinata, 2024). Impact of iron on the digestive system: Up to 60% of individuals taking oral iron supplements experience gastrointestinal side effects, including constipation, nausea, and bloating. Iron triggers inflammation in the intestines by generating reactive oxygen species (ROS). Furthermore, it can alter the gut microbiota by promoting the growth of harmful bacteria (enteropathogens), reducing beneficial microbial species, and potentially causing shifts in archaeal populations (Bloor et al., 2021).

Anemia during pregnancy poses significant risks to maternal and fetal health, contributing to complications such as preterm birth, maternal fatigue, and increased susceptibility to infections (Obeagu, 2025). Iron deficiency, a leading cause of anemia, is commonly managed with pharmacological supplementation (Fe tablets); however, challenges such as gastrointestinal side effects, inconsistent adherence, and limited access to healthcare resources often hinder its effectiveness (DeLoughery et al., 2024). Emerging evidence suggests that dietary interventions, particularly the consumption of iron-rich foods like dates—naturally high in iron, vitamin C, and antioxidants—may enhance hemoglobin synthesis and complement conventional treatments (Kalsum et al., 2025). This study aims to provide targeted midwifery care to Mrs. DN, a 38-week pregnant woman diagnosed with moderate anemia, while evaluating the efficacy of a dual intervention combining daily consumption of seven dates and Fe tablets over 14 days. By documenting changes in hemoglobin levels, symptom alleviation, and patient adherence through the SOAP (Subjective, Objective, Assessment, Plan) framework, this research explores a culturally aligned, accessible strategy for improving anemia management in pregnancy.

STUDY DESIGN

This study employed a qualitative case study approach to explore the phenomena associated with complaints and clinical findings during midwifery care in a specific context. Data were

systematically collected through multiple sources, including patient interviews, clinical observations, and medical records, and were documented using the SOAP framework (Subjective, Objective, Assessment, Plan). This structured method ensured comprehensive documentation of subjective experiences (patient-reported symptoms), objective clinical data (e.g., hemoglobin levels), healthcare assessments, and actionable care plans, capturing the case's complexity within its naturalistic setting.

The intervention addressed Mrs. DN's moderate anemia through a dual strategy: administering iron (Fe) tablets daily and consuming seven dates for 14 consecutive days. Data collection spanned the intervention period, with hemoglobin levels, maternal symptoms, and adherence to the regimen monitored at baseline, mid-intervention, and post-intervention. Subjective data, such as dietary compliance and perceived improvements, were gathered through semi-structured interviews, while objective data were derived from laboratory results and clinical evaluations. Thematic analysis was applied to identify patterns in symptom progression and response to treatment, ensuring alignment with the study's aim of evaluating the interplay between nutritional interventions and maternal health outcomes.

Ethical approval was obtained from the Health Polytechnic of the Ministry of Health in Malang, Indonesia, ensuring compliance with research ethics standards. Informed consent was secured from Mrs. DN prior to data collection, and confidentiality was maintained by anonymizing all personal information. The study's rigor was strengthened through triangulation of data sources and methods, enhancing the credibility of findings. By focusing on a single case, this research contributes nuanced insights into managing anemia in late-term pregnancy, offering practical implications for midwifery care strategies. The SOAP framework further facilitated a systematic, patient-centered analysis, bridging clinical practice and evidence-based decision-making.

PATIENT INFORMATION

The case study methodology was chosen to provide an in-depth, holistic understanding of Mrs. DN's condition at 38 weeks of gestation, particularly focusing on the interplay between moderate anemia and the effectiveness of interventions.

CLINICAL FINDINGS

The January 1, 2025, assessment indicated that Mrs. DN, a 27-year-old woman, is pregnant with her third child. Her last menstrual period (LMP) was April 9, 2024. She has a 7-year-old first child and a history of abortion during her second pregnancy. Mrs. DN complained of feeling easily fatigued. Objective examination showed a height of 154 cm and a weight of 63 kg. Her vital signs were within normal range: blood pressure 110/70 mmHg, body temperature 36.6°C, respiratory rate 20 breaths per minute, heart rate 80 beats per minute, and mid-upper arm circumference (MUAC) of 29 cm. Eye examination revealed pale conjunctivae, indicating anemia. Abdominal examination using Leopold's maneuvers revealed that in Leopold I, the fundal height was at the midpoint between the symphysis pubis and umbilicus, with a round, soft, non-ballotable part identified as the fetal buttocks. Leopold II showed a firm, flat surface on the right side of the abdomen, interpreted as the fetal back. Leopold III identified a round, challenging, and ballotable presenting part, consistent with the fetal head, already engaged in the pelvic inlet. Leopold IV confirmed that part of the fetal head had entered the pelvic inlet (convergent). Fundal height measured using McDonald's method was 29 cm. The estimated fetal weight was 2,790 grams, and the heart rate was 139 beats per minute with a regular rhythm. Laboratory results from Mojo Health Center dated December 17, 2024,

showed that the mother's hemoglobin level was 9.2 g/dL, indicating moderate anemia during pregnancy. Based on the findings, the midwifery diagnosis established was Mrs. DN, G3P1011, 38 weeks gestation, with moderate anemia. To address the issue, an intervention was implemented in which Mrs. DN consumed one iron (Fe) tablet and seven dates daily for 14 days. Dates are high in fiber and rich in essential minerals, including potassium, manganese, phosphorus, iron, sulfur, and magnesium, making them highly recommended for pregnant women.

THERAPEUTIC INTERVENTION

The intervention was carried out by consuming seven dates daily for 14 days to observe their effect on the existing anemia condition. Two weeks after the intervention, Mrs. DN was scheduled for a follow-up examination to assess the effectiveness of the treatment. After completing the intervention of consuming a combination of Fe tablets and seven dates per day for 2 weeks, a follow-up examination was conducted. Subjectively, Mrs. DN reported no complaints. The physical examination showed a body weight of 63 kg, blood pressure of 110/70 mmHg, body temperature of 36.6°C, and a respiratory rate of 20 breaths per minute. Eye examination revealed anemic conjunctivae, and abdominal inspection showed the presence of a linea nigra. On Leopold I, the fundal height was at the midpoint between the pubic symphysis and the umbilicus, and a round, soft, non-ballotable part was palpated, indicating the fetal buttocks. Leopold II revealed a firm, flat area on the right side of the abdomen, consistent with the fetal back. Leopold III identified the presenting part as round, firm, and ballotable, indicating the head, which had already entered the pelvic inlet. Leopold IV showed that a small part of the fetal head had engaged in the pelvic inlet (convergent). Fundal height measured 29 cm using the McDonald method, the estimated fetal weight was 2,790 grams, and the fetal heart rate was 150 beats per minute with a regular rhythm. Laboratory results from Ahmad Dahlan Hospital on January 14, 2025, showed an increase in hemoglobin levels to 9.9 g/dL, indicating improvement, although still categorized as moderate anemia. Based on these findings, the established diagnosis was Mrs. DN, G3P1011, with moderate anemia at 40 weeks of gestation.

DISCUSSION

Anemia is a condition marked by a reduced number of circulating red blood cells or red blood cells that are inadequate in quantity and oxygen-carrying capacity to fulfill the body's physiological requirements. Hemoglobin (Hb) is essential for transporting oxygen to the body's tissues (Singh et al., 2024). Anemia during pregnancy is a common condition among women in developing countries, indicating that iron stores prior to pregnancy are often insufficient. Additionally, the physiological changes during pregnancy are not always adequate to meet the body's increased demands. Therefore, iron supplementation during pregnancy has become a standard practice to prevent iron deficiency anemia (Raut & Hiwale, 2022).

Preventing anemia in pregnant women can be achieved by ensuring sufficient intake of key nutrients, especially fruits and vegetables. Dates, for example, provide about 13.7 mg of iron per 100 grams and are a rich energy source with a balanced nutritional profile. They contain carbohydrates, tryptophan, omega-3 fatty acids, vitamin C, vitamin B6, and important minerals such as calcium (Ca), zinc (Zn), magnesium (Mg), potassium, manganese, phosphorus, sulfur, as well as high dietary fiber. These nutritional benefits make dates a highly recommended fruit for pregnant women (Yulaikah & Kuswati, 2024).

The study's findings revealed a rise in hemoglobin levels, increasing from 9.2 g% initially to 9.9 g% following a 14-day intervention where seven dates were consumed daily. This outcome aligns with conclusions from a systematic review, which found that consuming dates or date extracts positively influences hemoglobin levels in pregnant women. The substantial iron content in dates, combined with other vital nutrients, aids in fulfilling the increased iron demands during pregnancy and contributes to the prevention and treatment of anemia (Saputri et al., 2021).

A similar study involving 35 adolescent female participants reported comparable results. The average hemoglobin level prior to the intervention was 10.786 g/dL, which increased to 11.143 g/dL after the intervention. This represented a rise of 0.357 g/dL in hemoglobin levels. Thus, it can be concluded that the consumption of Ajwa dates improved hemoglobin levels among the adolescents (Ali et al., 2020). This study is also supported by research conducted on 26 anemic adolescents, which showed that the group consuming a syrup combining dates and bee pollen powder experienced a greater improvement in red blood cell quality than the group that consumed only date syrup. One of the improvements observed was statistically significant, indicating that combining these two ingredients is more effective in supporting red blood cell recovery and can provide better benefits for blood health (Mony et al., 2022).

Dates (Phoenix dactylifera Linn.) have potential as a natural solution for treating anemia due to their high iron content, safety for consumption, and affordability. Incorporating dates into the diet can increase hemoglobin levels without causing side effects (Naveed et al., 2023). A related study with 30 anemic adolescent participants demonstrated a significant increase in hemoglobin levels following the dates intervention. Consequently, it can be concluded that consuming dates positively influences the improvement of hemoglobin levels in adolescents with anemia (Kusumawardani et al., 2020).

LIMITATION OF THE STUDY

The limitations of this study include the small number of respondents, which makes the results less representative of the overall population, and the absence of a control group, which limits the ability to assess the effectiveness of the intervention comparatively.

CONCLUSION

Midwifery care for Mrs. DN, with the intervention of consuming dates for two weeks, demonstrated treatment success. Management of moderate anemia in Mrs. DN through a combination of iron supplement tablets (Fe) and consuming seven dates daily for 14 days showed an increase in hemoglobin levels from 9.2 g% to 9.9 g%. Although the levels have not reached the normal range, this improvement indicates a positive response to the intervention. This intervention aligns with existing theories and previous research findings and can be an alternative approach for managing moderate anemia in pregnant women. It is recommended that future researchers apply this approach on a larger scale with a longer duration and intensive monitoring.

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