

# Case Study: Hydrotherapy Foot Soak with Warm Water and Galanga Rhizome for Managing Edema in Third-Trimester Pregnant Women

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## ABSTRACT

Pregnant women in their third trimester often experience discomfort in the form of oedema, or swelling, in their legs. Although physical and psychological changes during pregnancy can impact this condition, leg oedema remains a troubling issue. To address this problem, a warm foot bath therapy with kencur (a type of rhizome) may be used as a solution. This study aims to provide midwifery care to reduce leg oedema in a third-trimester pregnant woman, specifically Mrs. S, at PMB Wirahayu, S.Tr.Keb, Bandar Lampung, in 2023. This descriptive research with a case study approach was conducted from February 16 to March 3, 2023, involving Mrs. S. Research instruments included physical examination tools and assessment formats. Primary data were collected with the subject's informed consent. On February 16, 2023, Mrs. S, a pregnant woman at 34 weeks of gestation, was found to have leg oedema. Care was provided through health education on warm foot baths with kencur. After two weeks, Mrs. S's leg oedema had decreased. The application of warm foot baths with kencur successfully reduced leg oedema in a third-trimester pregnant woman at BPM Wirahayu, S.Tr.Keb. The documentation process and patient consent facilitated the research, leading to a final outcome of reduced oedema.

**Keywords:** Leg oedema, pregnant women, warm foot bath, oedema therapy

## INTRODUCTION

Physiological and psychological changes during pregnancy can lead to discomfort, which can be quite distressing for pregnant women. This discomfort has the potential to affect their mood and overall well-being (Faniza et al., 2021). Although discomfort is a physiological aspect of pregnancy, if left unaddressed, it can negatively impact both the mother and the fetus, physically and psychologically. The mother may experience physical pain that disrupts her daily activities (Natalia & Handayani, 2022).

One physical change that occurs during pregnancy is edema, which is commonly experienced by pregnant women in the second and third trimesters (Hestiyana et al., 2022). Edema is a condition characterized by the accumulation of fluid in body tissues, leading to swelling. During pregnancy, edema commonly occurs in the feet, ankles, and hands (Lent-Schochet & Jialal, 2023). During the third trimester of pregnancy, many women experience dependent edema. This occurs due to the accumulation of sodium, which leads to fluid retention in the tissues (Widiastini, 2022). Approximately 80% of pregnant women experience leg edema, with the most common form being swelling in the lower legs. Edema can be an early symptom of pathological conditions and may even indicate serious chronic diseases during pregnancy (Mutia & Liva Maita, 2022). Swelling in the legs can lead to issues with the heart, kidneys, and other parts of the body, causing the organs to function abnormally (Setianingsih & Fauzi, 2022). Increased venous pressure in the lower legs of pregnant women can lead to venous circulation issues. This heightened pressure occurs in the lower extremities when the pregnant woman is sitting or standing, and in the inferior vena cava when lying on her back (Septiyana, 2023).

Swollen legs during pregnancy can be caused by either physiological (normal) or pathological factors. The enlarging uterus presses on the major blood vessel on the right side of the abdomen, known as the inferior vena cava, reducing the return of blood to the heart and causing blood to accumulate in the lower legs. This pressure occurs when the mother is lying on her back or tilted to the right. Therefore, pregnant women in the third trimester are advised to lie on their left side. Abnormal swelling may be caused by conditions such as preeclampsia, cellulitis, or deep vein thrombosis (Ali et al., 2020).

Edema occurs due to uterine pressure obstructing venous return and gravitational pull, leading to increased fluid retention in the legs. Pregnant women typically experience cramps,

discomfort, and a feeling of heaviness in the evening due to physiological edema. If a pregnant woman experiences swelling in the face or fingers, severe headaches, or blurred vision, these may be signs of preeclampsia and could indicate a serious condition (Rahmayanti et al., 2020). To treat leg edema, the following methods can be effective: avoid wearing tight clothing that impedes venous return, change positions frequently, avoid placing objects on the lap or thighs, lie on the left side to improve blood flow to both legs, engage in pregnancy exercises or workouts, give foot massages, and soak the feet in warm water (Nafra, 2023).

A study found that pregnant women experiencing physiological leg edema in the third trimester can use a warm water soak with galanga. This therapy is both safe and effective, with no side effects (Yunitasari & Widyastuti, 2021)

Several studies have found that managing physiological edema in pregnant women can be effectively done with warm water foot baths. This therapy helps stimulate the production of endorphins, which have analgesic properties, and can assist in reducing stress levels in pregnant women (Manullang et al., 2022). For pregnant women in the third trimester, warm water offers six benefits: reducing stress, detoxifying, improving sleep quality, relaxing muscles and joints, alleviating pain or discomfort, enhancing heart function, easing shortness of breath, and addressing anxiety (Saragih & Siagian, 2021).

To reduce leg edema, soak the feet in warm water at a temperature of 40°C-43°C, with the water level 10-15 cm above the ankles, for 20-30 minutes each day for five days. Vasodilation from the warm water helps improve blood circulation, facilitating better return of blood to the heart and reducing the likelihood of edema (Hutagaol et al., 2023). Galanga rhizome is easily found and is commonly grown as a medicinal plant. It is a traditional herb with various benefits, including its use as a compress for swelling and inflammation. (Handayani et al., 2020). The aqueous extract of galanga leaves and rhizomes exhibits anti-inflammatory properties when tested for acute inflammation. Prolonged use of this extract enhances its anti-inflammatory effects (Widi Lestari et al., 2017).

## **METHOD**

This case study aims to provide midwifery care for a third-trimester pregnant woman experiencing leg edema at PMB Wirahayu, S.Tr.,Keb, Bandar Lampung. The study employs a descriptive design with a case study approach to address the educational needs related to leg

edema discomfort. The research was conducted from February 16, 2023, to March 3, 2023, involving Mrs. S, a G2P1A0 with 35 weeks of gestation. Instruments used include physical examination tools and midwifery care assessment formats for documentation purposes. Data collection was carried out through primary sources, including observation, direct interviews, and care provision. The subject provided informed consent to participate in the study. The non-pharmacological method to be used for managing edema in Mrs. S in this study is a warm foot soak mixed with galanga (kencur) at a temperature of 38°C for at least 10 minutes. This method aims to relieve muscle tension and boost endorphin production, which helps the body to relax and feel more at ease (Prianti, 2023)

## RESULTS

This study was conducted at Praktik Mandiri Bidan (PMB) Wirahayu, S.Tr.,Keb, an independent midwifery practice located in Panjang, Bandar Lampung. On February 16, 2023, the researcher performed a subjective assessment of Mrs. S, a 29-year-old Javanese woman with a high school education who is a housewife. Her husband, Tn. O, is 30 years old, Javanese, also with a high school education, and works as a laborer. They live in Gunung Jaha LK 1, Panjang, Bandar Lampung. This is her second pregnancy, with her last menstrual period beginning on June 13, 2022. She has no history of any illnesses. Mrs. S reported experiencing leg edema for the past week and mentioned that she performs household chores with assistance from her husband.

In the objective assessment, Mrs. S was in good general condition, with alert consciousness, normal vital signs, and fundal height appropriate for her gestational age. Leopold's maneuvers showed: fundus palpated as the buttocks, back felt on the left side of the abdomen, head palpable, and the head had not yet engaged in the pelvic inlet. Physical examination through inspection and palpation revealed edema in the lower extremities. Supporting tests showed hemoglobin at 12 g/dL, with negative results for urinary protein and glucose. Based on the subjective and objective data assessment, the diagnosis and problem for Mrs. S, who is 35 weeks pregnant with physiological leg edema, were established. The management plan involves foot soaks in warm water mixed with galanga rhizome. The care plan was developed based on the interpreted data and includes the following:

1. Inform the patient that while her general condition and vital signs are normal, there is edema in her legs, causing discomfort particularly in the feet and lower legs.

2. Explain that the discomfort experienced is normal, as prolonged standing leads to fluid accumulation in the legs. Additionally, as the pregnancy progresses, the growing uterus and increased body weight contribute to added stress on the legs, which affects blood circulation and results in leg edema.
3. Advise the patient to avoid standing or engaging in prolonged activities, and to rest by lying on her left side to improve venous blood circulation. Recommend foot soaks in warm water mixed with galanga for 10 minutes to alleviate discomfort, reduce pain and stress, promote relaxation, and enhance blood circulation in the legs.
4. Educate the patient about warning signs of pregnancy complications, including persistent vomiting, high fever, swelling in the legs, hands, or face, severe headaches with seizures, reduced fetal movement, bleeding, and premature rupture of membranes. Advise her to seek immediate medical attention if these symptoms occur.
5. Inform the patient of labor signs such as abdominal cramping, tightening, and the appearance of red mucus. Advise her to visit a healthcare facility if these signs are present.
6. Instruct the patient to schedule a follow-up visit on March 3, 2023, or sooner if she experiences any concerns.

Table 1. Observation Results of Midwifery Care for Mrs. S's Pregnancy

No	Time	Data Collection	Assasment	Planning
1	February 16, 2023	<p><b>S:</b></p> <ol style="list-style-type: none"> <li>1. The patient has been complaining of edema in her legs for the past week.</li> <li>2. The patient reports feeling discomfort due to the edema in her legs.</li> <li>3. The patient reports no history of any medical conditions.</li> </ol> <p><b>O:</b></p> <ol style="list-style-type: none"> <li>1. There is edema in the lower extremities (legs), affecting the dorsum and calf areas.</li> <li>2. Physical examination and supplementary tests are within normal limits</li> </ol>	Mrs. S, G2P1A0, 35 weeks pregnant, with physiological leg edema.	Recommending the patient to avoid standing or engaging in prolonged activities, rest while lying on her left side, and perform a foot soak in warm water mixed with crushed galanga for 10 minutes to improve blood circulation, provide comfort, and achieve a relaxing effect.
2	March 3, 2023	<p><b>S:</b></p> <ol style="list-style-type: none"> <li>1. The patient reports that she has followed the recommendations provided.</li> <li>2. The patient states that she feels more comfortable</li> </ol>	Mrs. S, G2P1A0, 37 weeks pregnant, with physiological leg edema.	Remind the patient to avoid standing or prolonged activity, rest while lying on her left side, and continue with the warm foot soak therapy mixed with galanga

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and relaxed after soaking her feet in warm water mixed with galanga rhizome.

rhizome for 10 minutes if she still experiences discomfort.

**O:**

1. Edema is still present in the lower extremities but has decreased.
2. The patient reports regularly performing the foot soak therapy with warm water mixed with galanga rhizome.

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2 March 10, 2023 **S:**

1. The patient reports consistently using warm foot soaks mixed with galanga for 10 minutes.
2. The patient states that the swelling in her legs has decreased significantly and she feels more comfortable.

**O:**

Edema in the lower extremities has decreased compared to the previous week

Mrs. S, G2P1A0, 37 weeks pregnant, with physiological leg edema.

**Continue**

**Recommendations:**

1. Remind Mrs. S to avoid standing or prolonged activity.
2. Encourage her to continue lying on her left side to improve blood circulation.
3. Advise maintaining the foot soaking routine with warm water mixed with galanga rhizome for 10 minutes if she experiences any discomfort.

**Monitor and Educate:**

1. Continue monitoring the reduction of edema and any potential signs of complications.
2. Educate Mrs. S about recognizing signs of potential complications, such as sudden or severe swelling, headache, visual changes, or reduced fetal movement.

**Follow-up:**

1. Schedule the next follow-up visit as needed, particularly if there are any new symptoms or concerns.
2. Provide instructions on when to seek immediate medical attention (e.g., if severe symptoms develop).

## DISCUSSION

On February 16, 2023, Mrs. S, with a gestational age of 35 weeks, reported experiencing edema in her legs for the past week. Her daily activities include sweeping the yard and cooking while standing. The results of the supporting examinations were within normal limits. The researcher explained that this complaint is a common physiological condition as pregnancy progresses. The enlarging uterus increases the burden on the legs, impeding blood circulation and causing fluid accumulation in the legs. This explanation aligns with research conducted by Mutia & Liva Maita (2022), fluid accumulation in the legs is common in pregnant women during the third trimester due to the expanding uterus as pregnancy progresses. Additionally, the increase in maternal weight adds extra burden on the legs that support the body. Consequently, this leads to impaired venous circulation, resulting in leg edema.

According to research by Ali et al. (2020), the expanding uterus compresses the large blood vessel on the right side of the abdomen, known as the inferior vena cava, which reduces the return of blood to the heart and causes blood to pool in the lower legs, leading to edema in the feet. To address this issue, the researcher recommends several solutions, including elevating the legs during rest, massaging, and soaking the feet in warm water mixed with galanga. Soaking the feet in warm water mixed with galanga at a temperature of 38°C for at least 10 minutes can relieve muscle tension and enhance the production of brain hormones, leading to a more relaxed and calm body (Prianti, 2023). This recommendation aligns with the research conducted by Nafra (2023), which suggests that managing foot edema involves avoiding tight clothing that disrupts venous return, frequently changing positions, not placing objects on the lap or thighs, lying on the left side to enhance blood flow to both legs, engaging in pregnancy exercises or workouts, massaging the feet, and soaking the feet in warm water.

According to Saragih & Siagian (2021) warm water offers six main benefits: reducing stress, detoxifying the body, improving sleep quality, relaxing muscles and joints, alleviating pain or discomfort, enhancing heart function, relieving shortness of breath, and addressing anxiety. In the study by Widi Lestari et al. (2017), it is explained that galanga (kencur) is often used as a traditional remedy due to its efficacy in treating swelling or inflammation. Extracts from galanga leaves and rhizomes possess anti-inflammatory properties that have been proven effective in addressing acute inflammation. Longer durations of use will result in more significant anti-inflammatory effects.

Nasal receptors detect the aroma of galanga, which is then transmitted to the brain, influencing emotions and feelings. The scent is further sent to the hypothalamus, which regulates internal body systems such as temperature and blood flow, creating a calming and comfortable mood. This process also helps reduce pain and stress while promoting relaxation. (Sirait et al., 2022). Based on the results from the second visit on March 3, 2023, Mrs. S's complaint of foot edema has decreased. This improvement is attributed to Mrs. S's adherence to the recommendations provided by the researcher, which she has been following regularly at home. The researcher continues to remind the patient to maintain these practices if the symptoms still affect her comfort and advises her to visit a healthcare facility if any further concerns arise.

## **CONCLUSION**

The midwifery care provided to a third-trimester pregnant woman with a warm water and galanga rhizome foot soak to reduce leg edema was administered to Mrs. S at BPM Wirahayu, S.Tr.,Keb in Bandar Lampung using a documentation approach. The researcher collected data and obtained consent from the patient to participate, ensuring the research proceeded smoothly. During the initial assessment, Mrs. S, G2P1A0, with a gestational age of 35 weeks, presented with physiological edema. Following midwifery care and the patient's consistent application of the recommended interventions at home, the final evaluation showed a reduction in Mrs. S's leg edema.

## **ACKNOWLEDGE**

We would like to express our gratitude to PMB Wirahayu, S.Tr.,Keb for providing the support and facilities necessary for the successful completion of this research. Their assistance ensured that the study proceeded smoothly and in accordance with the planned schedule.



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