Research Article

THE IMPLEMENTATION OF FOOT SOOK USING WARM WATER WITH LEMONGRASS ON BLOOD PRESSURE REDUCTION IN MRS. W WITH PREECLAMPSIA IN DESA SUNGAI KITANO, KECAMATAN MARTAPURA TIMUR

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Abstract

Background: Preeclampsia is a condition in pregnant women characterized by hypertension or blood pressure of 140/90 mmHg. Preeclampsia can cause various complications for both the mother and fetus. One non-pharmacological therapy that can be used to lower blood pressure in pregnant women is soaking the feet in warm water boiled with lemongrass. **Objective:** Provide nursing care to Mrs. W by soaking her feet in warm water boiled with lemongrass to lower blood pressure in Mrs. W with preeclampsia in Desa Sungai Kitano, Kecamatan Martapura Timur. **Methods:** This research is a case study design on Mrs. W with preeclampsia. The intervention was given to third-trimester pregnant women with a foot soak in warm lemongrass-infused water for 3 consecutive days, with a frequency of once a day for 15 minutes. **Results** After administering the intervention of soaking the feet in warm lemongrass infusion for 3 days, the client's blood pressure decreased from 154/87 mmHg to 127/79 mmHg. The warmth of the lemongrass infusion will improve blood circulation because lemongrass contains essential oils that have a spicy and warming reaction, which can reduce muscle stiffness and dilate blood vessels. **Conclusion:** Soaking feet in warm lemongrass infusion helps lower blood pressure in pregnant women with preeclampsia. Suggestions for future researchers to apply other non-pharmacological therapies that can lower blood pressure in preeclampsia, such as soaking feet in salt water and ginger foot baths.

Keywords: Preeclampsia, Pregnant Women, Soak Feet of Lemongrass

INTRODUCTION

Pregnancy is a process that begins with conception (fertilization) and ends with childbirth. When pregnancy occurs, several risks can impact the health of both the mother and the fetus (Rina et al., 2023). Based on the results of the 2023 Indonesian Demographic Health Survey (SDKI), there has been a significant increase in the Maternal Mortality Ratio (MMR), which is 359 per 1,000,000 live births (BRIN, 2023). Based on the Maternal Perinatal Death Notification (MPDN) data, the top three causes of maternal death are non-obstetric complications (35.2%), hypertension during pregnancy, childbirth, and the postpartum period (26.1%), and obstetric hemorrhage (17.6%) (Kemenkes, 2024).

According to data from the World Health Organization (WHO), it is estimated that in 2020, there were 934 cases of preeclampsia occurring worldwide every day. Approximately 342,000 pregnant women experience preeclampsia. Meanwhile, the incidence of preeclampsia in Indonesia in 2023, according to the Indonesian Health Survey Report, has a prevalence of 4.3% (Kemenkes, 2023). Preeclampsia itself is a pregnancy complication syndrome characterized by high blood pressure (gestational hypertension), elevated protein levels in urine (hematuria), and fluid retention in the body. High blood pressure (hypertension) due to pregnancy itself is blood pressure higher than 140/90 mmHg, which has the potential to cause serious problems during pregnancy

(Harahap & Nainggolan, 2024). If high blood pressure is not managed during pregnancy, it will have negative impacts on both the mother and the fetus, such as maternal death and prematurity. It can lead to Intra Uterine Growth Retardation (IUGR) and stillbirth (Pratiwi et al., 2024).

In the management of preeclampsia, in addition to pharmacological therapy, non-pharmacological therapy can also be provided with a healthier lifestyle, including natural remedies such as foot baths with warm water and lemongrass, herbal therapy, nutritional therapy, and aromatherapy (Liszayanti & Rejeki, 2020). In this study, the researchers preferred to provide foot soaking therapy with warm lemongrass water due to several advantages, namely that it can be done independently by pregnant women, it does not require significant costs to perform, and lemongrass plants are also easy to find as many residents in Sungai Kitano Village grow them.

Research (Liszayanti & Rejeki, 2020) shows that foot-soaking therapy with warm water and lemongrass lowers blood pressure in pregnant women experiencing preeclampsia. The research results show a significant decrease in blood pressure, as evidenced by the difference in average blood pressure before and after the foot soak therapy with warm water and lemongrass. The research results (Rina et al., 2023) mention that foot soaking therapy with warm water and lemongrass lowers blood pressure in pregnant women than using warm water alone. Scientifically, washing the feet, especially with warm water, has many benefits for the body, particularly in improving blood circulation. Soaking the feet in warm water can improve circulation, reduce edema, and enhance muscle relaxation. This foot-soaking therapy (foot hydrotherapy) can also improve blood circulation by dilating blood vessels, allowing more oxygen to reach the swollen tissues (Rustanti et al., 2020).

Interviews and assessments conducted with a pregnant woman experiencing preeclampsia in Sungai Kitano Village on November 29, 2024, revealed that Ms. W is 35 weeks pregnant (third trimester). Ms. W reported that hypertension appeared when her pregnancy was 30 weeks along. Her reading was 139/77 mmHg during the blood pressure examination, and the urine protein test result was +1. The patient mentioned experiencing occasional dizziness. The patient said she only followed the medical advice regarding the use of medications to control blood pressure and has not yet undergone non-pharmacological therapy. The patient also mentioned that they are not yet aware of information related to non-pharmacological therapy for controlling blood pressure. Based on the above phenomenon, the researcher needs to intervene by providing a warm foot soak therapy with lemongrass to lower Ms. W's blood pressure.

METHODS

This research is a case study design on Mrs. W with preeclampsia living in Sungai Kitano Village, Martapura Timur, conducted from December 3-5, 2024. The client was instructed to soak her feet in warm lemongrass infusion for 3 consecutive days with a frequency of once a day every morning. The duration of washing the feet in warm lemongrass infusion was 15-20 minutes, with a water temperature of 37o-39oC, using 2 liters of water and 3 stalks of crushed lemongrass.

Data was collected from the assessment results through interviews, direct observation, and objective data from the KIA book. The tool used was a maternity nursing care assessment sheet.

RESULTS AND DISCUSSION

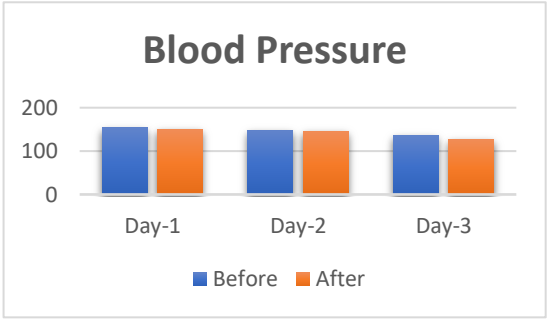
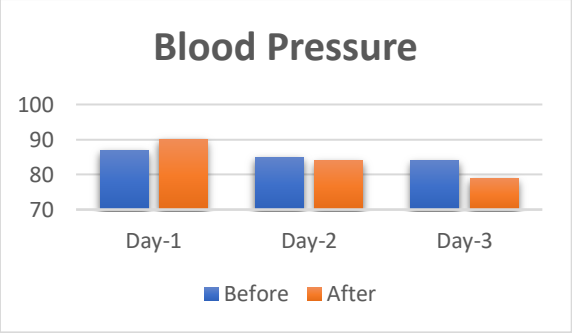


Table 1. Results of Systolic Blood Pressure Examination Before and After Intervention

After the intervention of soaking the feet in warm lemongrass-infused water for 3 consecutive days, it was found that there was a decrease in blood pressure. The reduction in systolic blood pressure between before the intervention, which was 154 mmHg, and after the intervention, which was 137 mmHg, indicates a decrease in blood pressure of 23 mmHg.

Table 2. Results of Diastolic Blood Pressure Examination Before and After Intervention



Based on the results of the diagram above, there was a slight increase in diastolic blood pressure on day 1, from 87 mmHg before the intervention to 90 mmHg after the intervention. This was due to the patient consuming salted fish and not taking antihypertensive medication the day before. However, the increase in blood pressure was still within normal limits.

DISCUSSION

The principle of warm water's action is through conduction, where the transfer occurs from the warm water into the body. When the heat-sensitive receptors in the hypothalamus are stimulated, the effector system will emit signals by producing sweat and experiencing peripheral vasodilation. The change in the size of blood vessels is regulated by the vasomotor in the medulla oblongata of the brainstem, under the influence of the hypothalamus in the anterior part, resulting in vasodilation. The occurrence of vasodilation in these blood vessels causes an increase in blood flow to each tissue while simultaneously increasing capillary permeability, which is beneficial for relaxing the muscles that affect the joints in the human body (Wardani & Herlina, 2022).

Soak your feet in this warm water with a boiled infusion of lemongrass. Lemongrass contains hypolipidemic substances that are beneficial in reducing the risk of hypertension and lowering blood pressure. The effect of hypolipidemic substances is a reduction in the level of low-density lipids in the bloodstream. The antihypertensive compounds flavonoids and alkaloids are contained in lemongrass extract because they contain essential oils (Muzayyana et al., 2024). In the study by Rustanti et al. (2020), soaking the feet in warm lemongrass infusion effectively lowered blood pressure. Changes occurred in all respondents, with an average decrease in systolic blood pressure of 7 mmHg and diastolic blood pressure of 7.6 mmHg.

The administration of the warm lemongrass foot soak intervention to Mrs. W focuses on the issue of preeclampsia with the nursing diagnosis of Ineffective Peripheral Tissue Perfusion. The client and the researcher discussed the timing of the intervention to ensure it could be done at the same time every day. In administering soaking feet in warm lemongrass-infused water for 15 minutes, blood pressure measurements are always taken twice, before and after the intervention each day, using a digital sphygmomanometer while the client sits relaxed.

There was a decrease in systolic blood pressure from before the intervention, which was 154 mmHg, to after the intervention, which was 137 mmHg, so it can be said that there was a decrease in blood pressure of 23 mmHg. Diastolic blood pressure showed a slight increase on the first day, from 87 mmHg before the intervention to 90 mmHg after the intervention. This was due to the patient consuming salted fish and not taking antihypertensive medication the day before. However, the increase in blood pressure was still within normal limits. The study (Fitri, 2024) mentions that medication adherence has a significant correlation with blood pressure in hypertensive patients. In the study, it is explained that the more compliant pregnant women are with taking their medication, the more controlled their blood pressure becomes. Adherence to medication in preeclampsia patients is crucial because strict control of hypertension during pregnancy is essential to prevent dangerous complications.

In the diagnosis of knowledge deficiency, educational interventions were provided to the client so that they could understand preeclampsia, starting from its definition, causes, signs & symptoms, and what families can do at home for pregnant women with preeclampsia to non-pharmacological

interventions that can be used to address preeclampsia along with their preparation and implementation methods. The health education regarding hypertension conducted in this study used materials and media prepared by the researcher and team in the form of a booklet titled "IBU CERIA (Useful Information for Healthy Expectant Mothers)." Education regarding the process of hypertension disease was conducted in one session lasting 15-20 minutes.

The knowledge and adherence of Mrs. W improved, as she initially was not consistent in taking her medication. However, after Mrs. W was educated about the medication guidelines on the first day, she followed the researcher's recommendations. She consistently took her medication, being monitored by the researcher from the first day to the last. In addition, Mrs. W also changed her dietary habits by reducing oily/fried foods and limiting salt usage to less than 1 teaspoon per day while cooking.

CONCLUSION

Based on the assessment results of Mrs. W, two diagnoses were established: Ineffective Peripheral Tissue Perfusion and Knowledge Deficit. The intervention of soaking the feet in warm lemongrass-infused water on Mrs. W effectively lowered blood pressure, with the blood pressure before the intervention being 154/87 mmHg and after the intervention being 127/79 mmHg. Suggestions for future researchers to apply other non-pharmacological therapies that can lower blood pressure in preeclampsia, such as soaking feet in salt water and ginger foot baths.

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