

EFFECT OF BEET JUICE ON HEMOGLOBIN LEVELS AMONG ANEMIA PREGNANT WOMEN IN KEMUTUG KIDUL BATURRADEN

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ABSTRAK

Background. Anemia in pregnancy is the condition of the mother with a hemoglobin (Hb) level of <11 g% in the first and third trimesters, while in the second trimester the hemoglobin level is <10.5 g%. The impact of anemia in pregnancy can reduce the immune system resulting in fetal death in the womb, abortion, birth defects, low birth weight. During childbirth, anemia can cause uterine inertia, the mother becomes weak, causing prolonged labor, while during the puerperium bleeding can occur.

Objective. Reporting case of juice effect serving among anemia pregnant women

Methods. This research was conducted with a case study on a pregnant woman with anemia in Kemutug Kidul Baturraden Village. The intervention given was in the form of beet juice which was consumed once a day in the morning for 7 consecutive days. Monitoring is carried out every day via Whatsapp to ensure that clients carry out according to the program.

Results. The results of the hemoglobin examination before the intervention were 10,5 g/dL and after the intervention had increased to 11,1 g/dL.

Conclusion. Giving beet juice is effective for increasing hemoglobin levels in pregnant women with anemia.

KEYWORDS

Anemia, beet juice, diet, dishes, nutrition, pregnancy

INTRODUCTION

Anemia in pregnancy is the condition of the mother with a hemoglobin (Hb) level of <11 gr% in the first and third trimesters, while in the second trimester the hemoglobin level is <10.5 gr% (Sjahriani & Faridah 2019). Anemia sufferers usually show signs of weakness, fatigue, lethargy, shortness of breath, pale face, difficulty concentrating and excessive fatigue (Risnawati, Indanah & Sukesih 2021).

Most women experience anemia during pregnancy, both in developed and developing countries. The World Health Organization (WHO)

estimates that 35-75% of pregnant women in developing countries and 18% of pregnant women in developed countries experience anemia. According to WHO data, the global prevalence of anemia in pregnant women worldwide is 41.8%. The prevalence of anemia in pregnant women is estimated to be 48.2% in Asia, 57.1% in Africa, 24.1% in America and 25.1% in Europe. In Indonesia, the incidence of anemia in pregnant women tends to increase. Based on the results of Basic Health Research (Riskesmas) in 2013, the prevalence of anemia in pregnant women was 37.1%, increasing to 48.9% in 2018. The high

prevalence of anemia can have negative consequences such as obstacles to fetal growth and deficiency of Hb in the blood resulting in a lack of oxygen being transferred throughout the body and brain (Manuaba 2010).

Anemia of pregnancy is called "potential danger to mother and child" (potential to harm mother and child). The impact of anemia in pregnancy can reduce the immune system resulting in fetal death in the womb, abortion, birth defects, low birth weight (LBW). During childbirth, anemia can cause uterine inertia, the mother becomes weak, causing prolonged labor, while during the postpartum period bleeding can occur (Setiawati et al. 2013).

During pregnancy there is often iron deficiency because pregnant women have a doubling of the need for iron due to an increase in blood volume without expansion of plasma volume, to meet the needs of the mother (preventing blood loss during childbirth) and fetal growth (Lantu, Tendean & Suparman 2016). So it takes more iron to form hemoglobin during pregnancy because hemoglobin functions to transport oxygen from the lungs throughout the body. If the body is deficient in iron, hemoglobin cannot function properly (Oktaviani, Makalew & Solang 2016). Handling of anemia in pregnant women can be done by means of pharmacology and non-pharmacology. The pharmacological method is consuming Fe tablets while the non-pharmacological method is consuming beets (Nursela et al. 2021).

Beets are rich in iron, a very important component in red blood cells (Romayanti & Novita

2022). Apart from iron, beets also contain folic acid which is beneficial for the development of the baby's spinal cord, reduces the risk of defects in the baby and improves the mother's immune system, prevents osteoporosis and anemia and several other health problems that affect pregnant women (Apryanti 2021). Other ingredients in beets include vitamins A, B, C with high water content, carbohydrates, protein, fat, calcium and phosphorus.

Based on the results of interviews with the Kemutug Kidul Village Midwife, Baturraden, there were 2 out of 6 pregnant women who experienced anemia. One of them had consumed beetroot by processing it into soup but had never processed it into juice. Patients also do not know the benefits of beets for pregnant women with anemia. Therefore the authors are interested in knowing the effectiveness of beetroot juice on hemoglobin levels in pregnant women with anemia.

METHOD

This research was conducted for 7 days. The implementation of nursing for patients was carried out from 14-20 May 2023. Before the intervention, the authors first built a trusting relationship with the patient, conducted an assessment, escorted the patient to the Health Center to check Hb before the intervention and gave beets to the patient. processed into juice by the patient.

The implementation began with an Hb examination on May 13, 2023 with a result of 10.5 g/dL. After knowing that the patient's Hb is still low, the

authors begin to explain the benefits, how to process and consume beetroot juice, but still have to balance adherence in consuming blood-boosting tablets as well. Patients can process beets into juice by grinding 1 beetroot, 1 lemon and 1 tomato and then serving it in a 200 ml glass and consuming it once a day in the morning for 7 consecutive days. The author monitors to ensure that patients can carry out beetroot juice consumption programs accordingly via Whatsapp.

RESULTS

The Effect of Beet Juice on Hemoglobin Levels in Pregnant Women

Based on the results of the examination showed that there was an increase in Hb in patients after being given beetroot juice intervention. This is in line with research conducted by Risnawati, Indanah and Sukesih (2021) that there is an average difference in changes in hemoglobin levels of pregnant women with anemia in the control group before and after administration of Fe tablets of 0.16 gr/dl, while in the experimental group before and after administration of Fe tablets and beetroot juice of 0.88 gr/dl with a p-value of $0.000 < 0.05$, meaning that administration of beetroot juice is effective in increasing hemoglobin levels in pregnant women with anemia. According to Setiana and Lailaturohmah's research (2022) also stated that there was an increase in Hb levels in pregnant women with anemia after consuming beetroot juice.

Anemia often occurs due to iron deficiency because pregnant women have a doubling of the need for iron due to an increase in blood volume without

expansion of plasma volume, to meet the needs of the mother (preventing blood loss during childbirth) and fetal growth (Lantu, Tendean & Suparman 2016). So you need more iron to form hemoglobin because hemoglobin is a protein in red blood cells that functions to deliver oxygen from the lungs to the rest of the body. If pregnant women have low hemoglobin levels, it can cause anemia which endangers the condition of the fetus (Liesmayani, Nurrahmaton & Elisa 2022). Another way to reduce the incidence of anemia in pregnant women is not only by giving iron tablets, but must be supported and assisted by providing iron-rich nutritional intake. One of the fruits that are high in iron is beets.

Beets, known as red beets, are a type of plant from the Amaranthaceae group and have the Latin name *Beta Vulgaris*. Beets are rich in iron, a very important component in red blood cells (Romayanti & Novita 2022). In addition to iron, beets also contain folic acid which is beneficial for the development of the baby's spinal cord, reduces the risk of defects in the baby, helps the formation of the baby's brain, boosts the mother's immune system, prevents osteoporosis and anemia and several other health problems that affect pregnant women. (Apyanti 2021). The content of folic acid and iron in beets is quite high, which reactivates and regenerates red blood cells and supplies oxygen which is useful for the health of red cells. Beets also contain vitamin C which makes it easier for the body to absorb iron, which means that if iron can be absorbed properly the formation of new red blood cells will also occur properly and smoothly

(Indrayani, Choirunissa & Tambunan 2020). Meanwhile, other ingredients in beets include carbohydrates, vitamin A, potassium, fiber, magnesium, phosphorus, protein, sodium, tryptophan and betacyanin (Nursela et al. 2021).

Even though patients are taking blood-boosting tablets, beets can effectively increase hemoglobin levels because beets work by stimulating the circulatory system and helping to build red blood cells because the content of folic acid and B12 in beets is an important key in cellular metabolism and is needed for the normal development of erythrocytes. Beets also cleanse and strengthen the blood so that blood can carry nutrients throughout the body so that the number of red blood cells will not decrease (Putri & Tjiptaningrum 2016).

LIMITATION

This research has obstacles in its implementation such as difficulties in finding patients who are willing to be given intervention. Besides that, another obstacle is the limited time in administering beetroot juice interventions to patients.

CONCLUSION

Conclusion

Based on the results of the implementation that has been carried out, namely giving beetroot juice to pregnant women with anemia in Kemutug Kidul Village, Baturraden District, the results are:

The description of the hemoglobin level before the intervention was 10.5 g/dL and after the intervention it became 11.1 g/dL

There was an increase in hemoglobin levels in patients after being given the intervention for 7 days. Thus giving beetroot juice can effectively increase Hb levels in pregnant women with anemia

Suggestion

Giving beetroot juice can be done independently by the family when there are pregnant women with anemia so as to prevent a decrease in hemoglobin, but the family must also maintain the compliance of pregnant women in consuming iron tablets. It is hoped that local health services can optimize health education regarding the benefits of beets for pregnant women with anemia or with other food ingredients that are more commonly found in the community. For future research, it is expected to be able to intervene by extending the time of giving beetroot juice to pregnant women with anemia.

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