

THE EFFECT OF DATES AND HONEY ON HEMOGLOBIN ENHANCEMENT IN PREGNANT WOMEN WITH ANEMIA

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ABSTRAK

Kehamilan merupakan perubahan fisiologis pada wanita. Terdapat perubahan pada tubuh selama kehamilan, salah satunya adalah pada sistem perembuluh darah. Perubahan tersebut membuat volume plasma dalam darah meningkat hal ini mengakibatkan adanya pengenceran pada darah. Dari perubahan tersebut ibu hamil rentan mengalami anemia, dimana kondisi tubuh kekurangan darah. secara global angka kejadian anemia mencapai 29,9% pada wanita usia subur atau lebih dari setengah miliar wanita berusia 15-49 tahun mengalami anemia. Dengan prevalensi 29,6% pada wanita tidak hamil usia subur dan 36,5% pada wanita hamil usia subur. Anemia pada kehamilan memiliki beberapa dampak seperti kelahiran premature dan perdarahan post partum. Maka anemia selama kehamilan membutuhkan penanganan serius. Penanganan pada anemia terdapat penanganana secara farmakologi dan non farmakologi. Penanganan non farmakologi yang dapat dilakukan salah satunya adalah menggunakan kurma dan madu. Kurma dan madu memiliki kandungan zat besi, vitamin C, vitamin B kompleks dan asam folat yang dibutuhkan dalam pembentukan sel darah. Dalam hal ini peneliti melakukan pencarian bukti literature mancanegara ditelusuri melalui sarana media elektronik dengan penuntun kata kunci. Didapatkan 6 artikel yang relevan, yang masing – masing artikel ini sudah mewakili satu pengaruh pemberian kurma dan madu pada kasus anemia selama kehamilan terutama pada ibu hamil yang mengalami anemia.

Kata kunci: Kehamilan, Anemia, Kurma dan Madu

ABSTRACT

Pregnancy is a physiological change in women. There are changes in the body during pregnancy, one of which is in the blood vessel system. These changes make the volume of plasma in the blood increase, this results in dilution of the blood. From these changes, pregnant women are prone to anemia, where the condition of the body lacks blood. Globally, the incidence of anemia reaches 29.9% in women of childbearing age or more than half a billion women aged 15-49 years have anemia. With a prevalence of 29.6% in non-pregnant women of childbearing age and 36.5% in pregnant women of childbearing age. Anemia in pregnancy has several effects such as premature birth and postpartum hemorrhage. So anemia during pregnancy requires serious treatment. There are pharmacological and non-pharmacological treatments for anemia. One of the non-pharmacological treatments that can be done is using dates and honey. Dates and honey contain iron, vitamin C, vitamin B complex and folic acid which are needed in the formation of blood cells. In this case, the researcher conducted a search for evidence of foreign literature traced through electronic media facilities with keyword guidance. There were 6 relevant articles, each of which represented an effect of giving dates and honey in cases of anemia during pregnancy, especially in pregnant women who have anemia.

Keywords: Pregnancy, Anemia, Dates Palm and Honey

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1. INTRODUCTION

Pregnancy is a physiological change that can occur in women ¹. During pregnancy there are several anatomical and physiological changes, these changes occur to maintain and adjust due to the developing fetus. One of the physiological changes that can occur during pregnancy is the vascular system (blood circulation) ¹. During pregnancy the blood volume increases by 1.5 liters to meet the needs of the blood vessels and compensate for blood loss ².

The occurrence of blood thinning can cause pregnant women to experience anemia during pregnancy. Anemia is "a condition in which the number of red blood cells or the concentration of hemoglobin in them is lower than normal." With a hemoglobin level of less than 12 g/dL in women ³. According to data from the *World Health Organization* (WHO) in 2019, the global incidence of anemia reached 29.9% in women of childbearing age or more than half a billion women aged 15-49 years experienced anemia. With a prevalence of 29.6% in non-pregnant women of childbearing age and 36.5% in pregnant women of childbearing age ³.

Pregnant women with anemia have some increased risk of complications. This depends on the severity of iron deficiency in the body of pregnant women. As there is a problem with the cardiovascular system, the risk of hemorrhagic shock, susceptible to infection, long wound healing and in mothers with critical or too low hemoglobin can cause death ⁴. Sufficient iron needs is a treatment for anemia. In meeting the iron needs there are pharmacological and non-pharmacological treatments. WHO recommends that the pharmacological treatment for pregnant women is to give iron supplements of 120 mg and folic acid 2.8 mg once a week ⁵. And services for pregnant women in Indonesia are given iron tablets of 60 mg Fe tablets and 400 g folic acid ⁶.

Non-pharmacological handling of anemia has been made by several studies, one of which is the provision of beets ⁷. In addition, in another study explained that dates and honey can be one of the non-pharmacological treatments, this is evidenced in studies that show changes in the increase in hemoglobin levels ⁸.

Dates in Greek are called phoenix datulis which means purple or red finger. Dates (*Phoenix dactylifera*) are plants from the *Arecaceae family* ⁹. The nutritional content in dates are carbohydrates, fiber, minerals and vitamins. Dates are also high in phenolic which reflects the presence of antioxidants. Dates contain mineral sources, one of which is iron and potassium ¹⁰. The iron content in dates is quite high, namely 0.90 mg/100g dates (11% RDA) ¹¹.

Honey is a natural product formed from flower nectar by honey bees (*Apis mellifera*) in the *Apidae family* ¹². Honey is used as a traditional medicine, with a lot of nutritional content, honey is used as a traditional medicine. Honey contains several vitamins and the iron content in honey is 0.42 mg/100g¹³.

2. DISCUSSION

The search for articles in this study used relevant Indonesian and English languages with the aim of knowing the effect of dates and honey on increasing hemoglobin in pregnant women with anemia. In searching for articles using databases, including Google Scholar, PubMed, NCBI and Elsevier. And the keywords used to search the literature are "Anemia", "Pregnancy", "Dates", and "Honey". The articles obtained will be reviewed to select articles that meet certain criteria and obtained 6 articles consisting of 4 national articles and 2 international articles which will then be reviewed.

The first article is a study conducted by M, Durrotun, et al (2019) at the Talang Health Center, Tegal Regency, entitled "The Administration of Fe and MAMA (Honey Dates) Tablets Increases Hemoglobin Levels of Term Pregnancy in Preparation for Childbirth". This study uses a quasi-experimental method with pre-post two treatment comparison. The number of respondents is 32 pregnant women at term. Respondents were divided into two groups, 16 respondents received Fe tablets intervention and in the second group was given Fe tablets and MAMA companion therapy (honey and dates) totaling 16 respondents. The results of the study were obtained in the Wilcoxon signed ranks test. There was a difference between giving Fe tablets and complementary therapy for Mama (Madu Kurma) on Hb levels at term pregnancy in preparation for labor with (P-value = 0.000). And by testing the effect with the Mann-Whitney Test, there is an effect between giving Fe tablets and complementary therapy for Mama (Honey Kurma) compared to giving Fe tablets on Hb Levels in Term Pregnancy in Childbirth Preparation⁸.

The second article is a research conducted by Dahlan, F.M., and Ardi, K., (2021) at PMB Rita Marningsih entitled "The Effect Of Fe Tablet And Date Palm On Improving Hemoglobin Level Among Pregnant Women In The Third Semester". This type of research is a quasi-experiment using two groups of pre-test and post-test and using a dependent t-test with the control group. Respondents were divided into two groups, the control group was given Fe tablets and the experimental group was given Fe tablets and dates with 15 respondents in each group. The results show that the p value is $0.044 < 0.05$ which means that there is an effect of giving Fe tablets and dates on the hemoglobin level of pregnant women¹⁴.

The third article is a study conducted by Laili, Fauzia, et al (2020) with the title "The Effect of Administering Honey on the Increasing of Hemoglobin Level in Pregnant Woman with Anemia". Aims to determine the effect of giving honey on pregnant women who have anemia. This research was conducted at BPM Ny. "E" Kediri. In this study using the One Group Pre-Test Post Test Design method with a population of pregnant women with anemia at BPM Ny. "E" Kediri. The sampling used is the total population with a sample of 16 respondents. Data collection was carried out directly by measuring hemoglobin levels in respondents before and after consuming honey. Respondents consumed honey 2 times a day for 1 week with a dose of 2 teaspoons and on the eighth day the hemoglobin level was measured again to determine the increase in hemoglobin levels. Based on the test obtained p-value = 0.002 ($p < \alpha$), so it can be concluded that there is an effect of giving honey on Hb levels¹⁵.

The fourth article of this research was conducted by Maulidanita, R., and Mardiah, A., (2021) with the title "The Effect of Date Juice to Increase of Hemoglobin Levels on Pregnant Woman Anemia". The research method used is a quasi-experimental with a pre-experimental form, One Group Pre-Test-Post Test. This study aims to determine the effect of Dates Juice on Increased Hemoglobin Levels in Pregnant Women with Anemia. The number of respondents is 15 with the criteria that have been determined by the researcher. All respondents were pregnant women in the third trimester and were willing to be given date juice and honey. The results of the study were P value 0.275 <0.05. Which explains the effect of giving honey date juice on increasing hemoglobin levels¹⁶.

The fifth is the result of research conducted by Widowati, R., (2020) conducted at the Pandeglang Public Health Center. With the title "Comparison of the Effectiveness of Dates and Honey Extract on the Increase in HB Levels in Third Trimester Pregnant Women". The study used a quasi-experimental design with a non-equivalent control group design. The sample includes 30 pregnant women in the third trimester. Respondents were divided into two groups, the first group amounting to 15 respondents were given date palm juice and the second group amounted to 15 respondents were given honey. Group 1 respondents had to drink date juice at a dose of 2 tablespoons once a day after lunch. Group 2 was given 5 ml of honey twice in the morning and evening, after meals and each respondent drank date juice or honey for 30 days. On day 30, the hemoglobin level was re-examined. The results of the study were obtained by calculating using the Paired T-Test test obtained p-value = 0.000 (p-value <0.05). It can be concluded that there is a significant difference between giving date juice and honey to the increase in hemoglobin levels in pregnant women¹⁷.

The sixth research article was researched by Mutmainah, R., et al (2021) with the title "The Effect Of Giving Moringa Honey Towards Hemoglobin Levels And Erythrocyte Index In Pregnant Women With Anemia At The Turikale & Lau Health Center, Maros Regency" which was held in Turikale & Lau Health Center." The purpose of this study was to determine the effect of giving honey with extra Moringa on hemoglobin levels and erythrocyte index in pregnant women with anemia. This study uses the True Experiment method, with a Double Blind Randomized controlled trial design. This study involved 40 anemic pregnant women, 20 of whom were in the intervention group and 20 of them in the control group. All participants received the same therapy, namely drinking 15 ml of honey with extra Moringa content every morning before eating for eight weeks. All subjects continued to take Fe tablets at night. Chi-Square, Mann-Whitney, and Wilcoxon tests were used to evaluate the data. The results showed that the P value for the increase in hemoglobin was 0.000 and the increase in the erythrocyte index was 0.006, it can be concluded that Moringa honey is more effective in producing hemoglobin levels and erythrocyte index¹⁸.

From the results of the literature review that has been presented, it shows that there is an effect of giving dates and honey on increasing hemoglobin levels in pregnant women with anemia. The definition of pregnancy according to the International Federation of Gynecology and Obstetrics (FIGO) is "as fertilization or union of spermatozoa and ovum, followed by nidation or implantation. When calculated from the

time of Fertilization to the birth of the baby, a normal pregnancy will take place within 40 weeks or 10 lunar months or 9 months according to the International calendar.¹⁹

During pregnancy, there are several changes in the anatomy and physiology of the body in women. one of them in the circulatory system, this change aims to adjust and meet the needs of the fetus in the woman's body during pregnancy. During pregnancy the blood is diluted or hemodiluted. Blood contained in the uterus and placenta requires approximately 1 liter in pregnancy. Plasma volume in pregnancy increases or hemodelution (dilution), increased plasma volume is a response to an underfilled vascular system due to systemic vasodilation and increased vascular capacity. Increased plasma fluid results in a decrease in hemoglobin during pregnancy. The decrease in hemoglobin is usually 1-2 g/dL by the end of the second trimester²⁰.

Because of this, pregnant women are prone to anemia. Pregnant women are said to be anemic if the maternal hemoglobin level is <11 g/dl in the first and third trimester examinations or <10.5 g/dL in the second trimester⁶. Other causes of anemia in pregnant women are iron deficiency, lack of folic acid or vitamin B12, chronic inflammatory disorders, parasitic infections such as malaria, and certain inherited disorders that cause the rest²¹.

Some of the impacts of anemia during pregnancy are having a 5 times greater risk of experiencing postpartum hemorrhage compared to pregnant women who do not experience anemia²². And anemia in the first trimester significantly doubles the risk of preterm birth²³.

Handling of anemia during pregnancy is pharmacological and non-pharmacological. Pharmacologically, low-dose iron supplementation of 60-100 mg daily can be equally effective in treating mild to moderate iron deficiency anemia if the anemia enters the category of severe anemia, immediately carry out further examinations at adequate health services²⁴. And on non-pharmacological services obtained from various researches, one of which is beetroot juice, dragon fruit, dates and honey.

Dates are one type of fruit that has a lot of content. Dates have several layers, namely pericarp, mesocarp, endocarp and one seed (also called kernel, pit, or pyrene). The layer that has the most flesh is the mesocarp layer⁹. One of the nutrients contained in dates is the mineral component in dates. Dates contain the main mineral components, in this case the researcher explains the calculation of material components with each % in dry dates, namely calcium by 0.046%, Phosphorus 0.085%, magnesium 0.145%, potassium by 0.471%, sodium 0.025%. In addition to the main mineral components, there are other mineral components in dates which are calculated in mg/kg in dry dates, namely Zinc 24.5 mg/kg, copper 5.50 mg/kg, manganese 5.7 mg/kg, and iron 191 mg. /kg. Vitamin C and vitamin B complex which are the main vitamins in dates. The content of B vitamins in dates is 0.05mg/100g. This content functions in the synthesis of the formation of red blood cells, namely iron, vitamin C and vitamin B complex²⁵.

Honey is a natural product formed from flower nectar by honey bees (*Apis mellifera*) in the Apidae family. The content of honey not only functions as a nutritional fulfillment product but also functions in health. In this case, honey is usually used as traditional medicine or alternative medicine¹². The iron content in honey is 0.42 mg/100g. Vitamin C is 0.5 mg and vitamin B complex is 2.34 mg²⁶. Iron functions in the synthesis of

hemoglobin. And vitamin C functions in the absorption of iron for maximum. And vitamin B complex in the formation of red blood cells²⁷.

3. CONCLUSION

Conclusions based on the results of the analysis that has been done by the author, it can be concluded that the administration of date honey can affect hemoglobin levels. Suggestions that can be given for the implementation of the next literature review are that more databases should be used so that they are able to produce more relevant articles and the search limit for the year used with keywords is the last five years.

Suggestions for midwives can apply the provision of honey dates as a companion in handling cases of anemia.

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