

Giving dates to pregnant women as an efforts to increase hemoglobin levels

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ABSTRACT

Anemia of pregnancy is a maternal condition with hemoglobin (Hb) levels <11 g% in the I and III trimesters or hemoglobin (Hb) levels below 11 g% in the I and III trimesters or levels < 10.5 g% in the second trimester. Anemia in pregnant women has a negative impact on both the mother and the fetus. Adverse effects on the mother are the occurrence of premature birth, low birth weight babies, infant mortality, time of parturition due to lack of uterine propulsion. Based on the author's experience when providing guidance to midwifery students who practice midwifery clinics, there are still pregnant women who do not take blood-boosting tablets because the side effects of these tablets are nausea, black bowel movements. So the mother is lazy to consume the blood-boosting tablet. The results of research regarding offering dates to pregnant women with mild anemia found that the average hemoglobin level of pregnant women before being given dates was 9.17 gr% with a standard deviation of 0.83gr%. While the average hemoglobin level of pregnant women after being given dates is 10.15gr% with a standard deviation of 0.800 gr%. The difference value before and before being given fruit is -0.983 with a standard deviation of 0.278. The results of the statistical test value of 0.001 means that there is a significant difference between Hb levels before and before being given dates. Giving dates to pregnant women as an effort to increase hemoglobin levels has been scientifically proven, therefore it is necessary to do community service by targeting a group of first trimester pregnant women who experience mild anemia and will be offered dates for 3 months at the Arrabih Pratama Clinic. After giving knowledge and offering dates to 10 pregnant women, they got changes and increases in hemoglobin levels ranging from 0.5 to 1.5 g%. It is expected to present dates that can be used as a method of midwifery care for pregnant women for the prevention of anemia.

KEYWORDS

Dates;
Mild Anemia;
Pregnant Women



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1. Introduction

Anemia of pregnancy is a maternal condition with hemoglobin (Hb) levels <11 g% in the I and III trimesters or hemoglobin (Hb) levels below 11 g% in the I and III trimesters or levels < 10.5 g% in the second trimester [1]. Anemia in pregnant women has a negative impact on both the mother and the fetus [2]. Possible adverse effects on pregnant women, namely premature birth, low birth weight babies, disability and even infant death, length of parturition due to lack of uterine propulsion [3]. Anemia can be caused by several factors [4]. There are direct and indirect factors [5]. In general, anemia is caused by malnutrition, lack of iron levels, malabsorption, heavy blood loss during first delivery, menstruation and chronic diseases such as pulmonary tuberculosis, intestinal worms, malaria and so on [5], [6].

Anemia has been studied by previous researchers including eltrombopag added to immunosuppression in severe aplastic anemia studied by Peffault de Latour [7]. Vadadustat in Dialysis-Independent Anemia and CKD Patients was studied by Chertow [8]. Diagnosis and treatment of autoimmune hemolytic anemia in adults: Recommendations from the First International Consensus Meeting studied by Jäger [9]. Long-term outcome in patients with severe aplastic anemia treated with immunosuppression and eltrombopag: a phase 2 study investigated by Patel [10]. Anemia associated with severe disease in COVID-19: A retrospective cohort study investigated by Tao [11]. Anemia and iron metabolism in COVID-19: a systematic review and meta-analysis conducted by Taneri [12].

Roxadustat for the treatment of anemia in patients with low risk myelodysplastic syndrome open label, dose selection, preliminary phase of a phase 3 study was investigated by Henry [13]. Effect of Limited vs Liberal Blood Transfusion Strategy on Major Cardiovascular Events Among Patients With Acute Myocardial Infarction and Anemia studied by Ducrocq [14]. COVID-19-associated acute necrotizing encephalopathy with brainstem involvement in a patient with aplastic anemia studied by Dixon [15]. Carbon Dots as a Potential Therapeutic Agent for the Treatment of Cancer Associated Anemia was investigated by Xu [16]. The safety and efficacy of Vadadustat for anemia in patients on dialysis was investigated by Eckardt [17]. Iron deficiency anemia: A comprehensive review of the emerging iron absorption, bioavailability, and food fortification approaches investigated by Shubham [18].

A tissue pharmacology-based approach to understanding the effects and mechanisms of Danshen on anemia was investigated by He [19]. Roxadustat for Treating Anemia in CKD Patients Not on Dialysis: Results from a Phase 3 Randomized Study investigated by Fishbane [20]. The effect of Iron Isomaltoside vs Ferric Carboxymaltose on Hypophosphatemia in Iron Deficiency Anemia was investigated by Wolf [21]. Executive Summary Recommendations and Expert Consensus for the Practice of Plasma and Platelet Transfusion in Critically Ill Children: From the Expertise in Transfusion and Anemia—Bleeding Control/Avoidance (TAXI-CAB) Initiative studied by Nellis [22]. Daprodustat for the Treatment of Anemia in Patients Not on Dialysis was studied by Singh [23]. Prevalence and Predictive Value of Anemia and Dysregulated Iron Homeostasis in Patients with COVID-19 Infection was studied by Bellmann-Weiler [24].

Association of Clonal Hematopoiesis of Indeterminate Potency with Worse Kidney Function and Anemia in Two Cohorts of Patients with Advanced Chronic Kidney Disease studied by Vlasschaert [25]. The controversy over the optimal management of anemia: conclusions from the Conference on Kidney Disease: Improving Global Outcomes (KDIGO) was studied by Babitt [26]. Phase 3, Randomized, Double-Blind, Active-Comparator (Darbepoetin Alfa) Study of Oral Roxadustat in CKD Patients with Anemia on Hemodialysis in Japan was studied by Akizawa [27]. Roxadustat Versus Epoetin Alpha for Treating Anemia in Patients with Chronic Kidney Disease on Dialysis: Results from the ROCKIES Phase 3 Randomized Study investigated by Fishbane [28]. Burden of anemia and its underlying causes in 204 countries and territories, 1990–2019: results from the 2019 Global Burden of Disease study researched by Safiri [29]. Iron Deficiency and Iron Deficiency Anemia: Implications and Impact on Parameters of Pregnancy, Fetal Development, and Early Childhood was studied by Means [30].

A case of severe autoimmune hemolytic anemia after receiving the first dose of the SARS-CoV-2 vaccine was investigated by Murdych [31]. Roxadustat for the treatment of anemia in chronic kidney disease patients not on dialysis: a Phase 3, randomized, double-blind, placebo-controlled (ALPS) study investigated by Shutov [32]. A Deep Learning Model for Classifying Red Blood Cells in Microscopy Images to Help Diagnose Sickle Cell Anemia was investigated by Alzubaidi [33]. Hemolysis contributing to anemia during long-term spaceflight was investigated by Trudel [34]. Anemia and iron deficiency among chronic kidney disease patients Stage 3-5ND in Chronic Kidney Disease Outcome and Pattern of Study Practice: often unmeasured, varied treated studied by Wong [35]. Inflammation-Induced Tryptophan Damage Associated With Anemia, Fatigue, and Depression in Cancer was studied by Lanser [36].

Anemia is a health problem throughout the world, especially in developing countries where an estimated 30% of the world's population suffers from anemia [37], [38]. The indirect cause of maternal death is anemia [39]. The top five causes of death were still dominated by bleeding (32%), hypertension in pregnancy (25%), infection (5%), prolonged labor (5%), abortion 1% and other causes (32%) [40]. Thus anemia in pregnancy increases the risk of maternal death [41], [42]. Analysis of factors affecting the level of anemia in anemic pregnant women found that adherence to consumption of Fe tablets had an effect on anemia [43], [44]. Factors related to the incidence of anemia found a close relationship between iron intake and the incidence of anemia [44]. Giving dates to pregnant women with mild anemia found an increase in hemoglobin levels after giving dates consecutively for 14 days. Another way to increase iron in the body is to consume dates [45]. Unlike most other fruits, dates contain carbohydrates and iron which are quite high, namely 0.9 mg/100gr of dates [46].

Based on the author's experience when guiding midwifery students who practice midwifery clinics, there are still pregnant women who do not take blood-boosting tablets because the side effects of these tablets are nausea, black bowel movements. So the mother is lazy to take the blood-boosting tablet. Midwives provide services based on knowledge and competence in the field of midwifery in accordance with Law No. 4 of 2019. In addition to providing pharmacology-based services and treatment, midwives are also required to provide non-pharmacological midwifery care for mild anemic pregnant women. Therefore, the author is interested in doing community service with the title "Giving Dates to Pregnant Women as an effort to increase Haemoglobin levels.

2. Method

The method of activity in this case is counseling to a group of first trimester pregnant women who experience mild anemia, after which an evaluation will be carried out on the extent of knowledge of pregnant women about the information provided. After that the team will give dates to a group of pregnant women with a duration of giving dates for 3 months as much as 100 grams per day. Giving dates will be stopped if based on the evaluation results in the 3rd month there has been an increase in hemoglobin levels.

3. Results and Discussion

The implementation of activities starting from health education activities related to anemia in pregnant women and how to overcome it, increasing understanding and awareness about the consumption of dates as food to increasing hemoglobin levels is shown in Figure 1. From the picture the participants pay close attention to the narrative from the community service team. According to theory, anemia is a condition in which the mother's Hb level is below normal. A low Hb content can indicate anemia, with symptoms such as weakness, lack of appetite, lack of energy, decreased concentration, headache, easy infection, firefly eyes, besides that the eyelids, lips and nails look pale.



Fig. 1. Health education activities related to anemia in pregnant women

The most common causes of anemia during pregnancy are iron deficiency and acute blood loss. Not infrequently the two are closely related, because excessive blood loss accompanied by loss of hemoglobin iron and depletion of iron stores in one pregnancy can be an important cause of iron deficiency anemia in a subsequent pregnancy. In this community service activity, counseling materials were also conveyed about the benefits of dates for increasing hemoglobin levels. Dates contain very good nutrition. The sugar content in dates can be directly absorbed by the body. The sugar content in this fruit is different from the sugar content in other foods, because the sugar content usually has to be broken down before being absorbed by the body.

Dietitians rate dates as the best food for pregnant women and nursing mothers. That the effect of giving dates on the progress of labor, for pregnant women to consume dates in the right amount and at the right time. Dates contain high carbohydrates so they can provide sufficient energy. Some of the sugar content consists of glucose, fructose, and sucrose. According to data from the Ministry of Health, Hajj explains that iron levels in dates are also quite high, namely 0.90 mg/100g dates (11% RDA), where iron is one of the components in the blood to carry oxygen in the blood, to maintain iron balance. in the body, thereby reducing the risk of bleeding in pregnant women. Vitamin C contained in date juice can

also increase iron absorption, especially by reducing ferric iron to ferrous iron. Apart from its role in converting Ferric to Ferrous prior to intestinal absorption, vitamin C also regulates iron homeostasis by inhibiting hepcidin expression (eg, in HepG2 cells), making vitamin C potentially helpful in attenuating iron deficiency. The metabolism of vitamin A contained in date palm juice has implications for iron homeostasis, so vitamin A deficiency can cause iron deficiency. After being given health information about anemia and consumption of dates, it can increase hemoglobin levels.

The next stage in this community service activity was checking hemoglobin levels in pregnant women. Checking hemoglobin levels was carried out on 10 pregnant women at the Arrabih Pratama Clinic as shown in table 1. From the table it can be seen that the lowest HB level was in Mrs. Kokom with an HB value of 8,7 and the highest with Mrs. Lia with an HB value of 10.7.

Table 1. Measurement of HB levels before giving dates food

No	Name	HB Levels
1.	Mrs. Rahmi	10 gr%
2.	Mrs. Atika	10.5 gr %
3.	Mrs. Wahyuni	9.8 gr%
4.	Mrs.Lia	10.7 gr%
5.	Mrs. Kiki	9.4 gr%
6.	Mrs. Kokom	8,7 gr%
7.	Mrs. Jukemi	9.7 gr%
8.	Mrs. Martini	9.6 gr%
9.	Mrs. Lora	10.5 gr%
10.	Mrs. Laila	10.3 gr%

After measuring hemoglobin levels in 10 pregnant women, hemoglobin levels were found to be in the category of mild anemia, then 10 pregnant women were given dates to increase hemoglobin levels, but apart from consuming dates, pregnant women also consumed blood booster tablets.

Dates are given for several periods, in the first period 3 kg of dates are given to each pregnant woman who is consumed for 1 month by consuming 100 grams a day in the morning or before breakfast. After that, periodic monitoring was carried out as shown in table 2. From the table it can be seen that there was an increase in HB from HB levels 1 to HB levels 2.

Table 2. Measurement of HB levels after the first administration of dates

No	Name	HB Levels 1	HB Levels 2
1.	Mrs. Rahmi	10 gr%	10.5 gr%
2.	Mrs. Atika	10.5 gr %	11 gr %
3.	Mrs. Wahyuni	9.8 gr%	9.8 gr%
4.	Mrs.Lia	10.7 gr%	11 gr%
5.	Mrs. Kiki	9.4 gr%	10.5 gr%
6.	Mrs. Kokom	8,7 gr%	9.4 gr%
7.	Mrs. Jukemi	9.7 gr%	10 gr%
8.	Mrs. Martini	9.6 gr%	10 gr%
9.	Mrs. Lora	10.5 gr%	10.5 gr%
10.	Mrs. Laila	10.3 gr%	10.5 gr%

Provision of dates is still being carried out because the addition of HB levels is still small, and there are still pregnant women who experience anemia. Furthermore, the community service team gave dates back to pregnant women as much as 6 kg for each pregnant woman. After that, an examination of HB levels was carried out again with the results listed in table 3. From the table it can be seen that the increase in HB levels after giving the third date.

Table 3. Measurement of HB levels after giving the second day of eating dates

No	Name	HB Levels 2	HB Levels 2
1.	Mrs. Rahmi	10.5 gr%	11.5 gr%
2.	Mrs. Atika	11 gr %	11.8 gr %
3.	Mrs. Wahyuni	9.8 gr%	12 gr%
4.	Mrs.Lia	11 gr%	12.5 gr%
5.	Mrs. Kiki	10.5 gr%	12.5 gr%
6.	Mrs. Kokom	9.4 gr%	11,8 gr%
7.	Mrs. Jukemi	10 gr%	11.5 gr%
8.	Mrs. Martini	10 gr%	11.5 gr%
9.	Mrs. Lora	10.5 gr%	12 gr%
10.	Mrs. Laila	10.5 gr%	12 gr%

Giving dates has an effect on pregnant women as a method of increasing hemoglobin levels. The Effect of Dates Extract on Increasing Hemoglobin Levels of Pregnant Women. The results showed that the average increase in hemoglobin levels was 0.4-1.2 gr^o% for 2 weeks of consuming dates. This community service is also based on the effectiveness of giving dates to pregnant women. The results of this study found a relationship between giving dates to pregnant women for 2 weeks in a row. Where is the HB level with p value < 0.001.

4. Conclusion

There is an increase in knowledge of pregnant women, because pregnant women who previously did not want to consume dates finally want to consume them. There is an increase in hemoglobin levels in pregnant women who have anemia. It is hoped that the clinical leadership can seek to provide counseling at least once a month, especially regarding the provision of dates during pregnancy. Giving dates can be used as a method of assistance to prevent anemia.

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Author Contribution

Activity plan for the implementation of date giving to pregnant women as an effort to increase hemoglobin levels.

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Conflict of Interest

The authors declare no conflict of interest.

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