



Effect of Date Juice and Coconut Water on Hemoglobin (Hb) Levels in Anemia Gravidarum

Ayu Laila Muffliha¹, ^KSri Dinengsih²

^{1, 2}Midwifery, Faculty Health Science, National University of Jakarta

Correspondence author email (^K): dini_alba@yahoo.com

ABSTRACT

Anemia is something condition where amount cell blood red or hemoglobin concentration in it more low from usually. Deep anemia pregnancy is condition mother with hemoglobin levels (Hemoglobin) in blood more low from 11 gr/dl. Knowing influence giving juice dates (*Phoenix dactylifera .L*) and coconut water (*Coconut water*) against mother's hemoglobin (Hb) level pregnant with anemia trimester III at the health center babelan. This study use *Quasi experiment* with *pretest- posttest* with control group design. Taking sample done use technique *purposive sampling* amounted to 34 mothers third trimester of pregnancy consisting of 17 people group intervention and 17 person groups control. Instrument study is form sheet observation, *informed consent*, date juice drink and coconut water data analysis used *descriptive statistics* and *paired t-test* to know difference score before and after intervention. There is difference average rate hemoglobin pretest and posttest given juice dates *Phoenix dactylifera .l*) and water coconut (*Coconut water*) with paired t-test results obtained Value 0.000 ($p < 0.05$). There is influence gift juice dates (*Phoenix dactylifera .l*) and water coconut (*Coconut water*) to rate hemoglobin (Hb) mother pregnant with anemia trimester III at the health center babelan 2023. Expected drink dates (*Phoenix dactylifera .l*) and water coconut (*Coconut water*).It can be one choice non-pharmacological drugs in increase hemoglobin level on mother pregnant trimester III.

Keywords: Pregnant women, Anemia Gravidarum, Date Juice

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INTRODUCTION

Deep anemia pregnancy is anemia because lack substance iron. Anemia on pregnancy is problem national because reflect mark well-being social economy society, and its influence is enormous to quality source human resources ¹. Prevalence of anemia on mom pregnant worldwide is 41.8 % , meanwhile prevalence of anemia in Mother pregnant in Asia by 48.2%, Africa 57.1%, America 24.1% and Europe 25.1%.Anemia is problem health especially serious global community influence children and women pregnant. Mother with anemia will own risk pregnancy Which high , LBW, bleeding postpartum, born dead and maybe will experience malnutrition. ²

There is get two way you can used For increase rate maternal hemoglobin pregnant that is with drug pharmacology And non-pharmacological. For treatment in a manner pharmacology that is with method consume tablet substance iron (Fe) with dose 60 mg/day³. Government program that is Administration of additional tablets blood as one effort important and is method Which effective Because can prevent And treat anemia lack substance iron and or folic acid. ⁴

Effort nonpharmacological like herbal medicines as effort possible alternative used For increase one of them is hemoglobin level with utilise fruit dates. Fruit dates is fruit that contains minerals needed by the body. Minerals contained among them substance iron, magnesium, calcium, phosphorus and potassium. Known on 100 grams dates contains 2.81 grams proteins,7,1 grams fiber, calcium 35 mg, carbohydrate 88.78 grams, vitamin C 0.4 grams Andsubstance iron 1.02 mg. Temporary water coconut young contain proteins, fat, carbohydrates, vitamin C, Vitamin B complex, and mineral (calcium nitrogen,phosphorus, potassium, magnesium, chlorine, sulfur, iron). Content substanceFe from coconut water as much as 2 mg/100 gram. From the Fe content so can confirmed if consumed can increase hemoglobin level. ⁵

At the moment done survey preliminary on December 23, 2022 at Public health center Babylon month data October until December as much as 51 mother person pregnant suffer from anemia, and researchers find still lots mother pregnant which not yet know efficacy dates and water coconut for anemia. Research Objectives This is is known influence of date juice and coconut water to Hemoglobin levels in anemia gravidarum at the health center babelan 2023.

METHOD

This research using *quasi experiment* with method *pretest- posttest group design*, population in the study is all Mother pregnant third trimester, totaling 51 people who experienced anemia in the health center area Babylon 2022. Instruments research used is an observation sheet. The analysis was carried out using a statistical test *paired T Test* with using SPSS.

RESULTS

Table 1 Influence Administration of Date Juice and Coconut Water to Rate Maternal Hemoglobin Third Trimester of Pregnancy in the Puskesmas Area Babylon Regency Bekasi

Group		<i>n</i>	<i>Means</i>	<i>Std Deviation</i>	<i>P Value</i>
Intervention	Pretest	17	10.1529	0.5088	0.000
	Posttest	17	11.6000	0.4664	

In table 1 the results of the pretest analysis in the group intervention own mean value of 10.1529 with mark standard deviation of 0.5088. Whereas result analysis on the post test obtained mark mean on group intervention as big 11.6000 with mark standard deviation 0.4664 can concluded that on group intervention obtained mark p-values 0.000 ($P < 0.05$) which means There is influence on giving date juice and coconut water in increase hemoglobin level.

Table 2 Influence hemoglobin levels in third trimester pregnant women and pretestGroup Post Test control in the Health Center area Babylon Regency Bekasi

Group		<i>n</i>	<i>Means</i>	<i>Std Deviation</i>	<i>P Value</i>
Control	Pretest	17	9,935	0.53261	0.000
	Posttest	17	10,906	0.51414	

In table 2 the results of the pretest analysis in the group control own mean value of 9.935 with mark standard deviation of 0.5326. Whereas result analysis on the post test obtained mark mean on group control as big 10,906 with mark standard deviation 0.5141.ada influence enhancement Hb levels in the group control (Fe tablets) with mark p-values 0.000 ($P < 0.05$).

DISCUSSION

That before mother pregnant given treatment the average hemoglobin level of the mother is known pregnant as big 10.153. After done treatment for 7 days is known that the average flat rate hemoglobin mother pregnant as big 11,600. Results study this describe that there is change average on group intervention, change mark average seen on average rate more posttest hemoglobin big compared to the pretest.

Substance iron (Fe) issubstance nutrition micro which very needed body. Generally substance iron which originate from source food vegetable (non-heme), such as: nuts and vegetables have proportion low absorption compared to with substance originating iron from source food animal (heme), such as: meat, eggs and fish. Substance heme iron is absorbed as much as 30%, meanwhile substance non heme iron only can absorbed as much as 5%. Substance iron inside dates needed for production

cell blood red, iron absorbed to in blood for channeled to marrow bones and will used for form hemoglobin for cell blood new red ⁶.

As effort prevent anemia, mother pregnant suggested for add amount blood through supply food which contain substance iron, acid folate, and vitamin B12. Because that mother pregnant recommended consume food you can form cells blood red like heart, fish anchovies, meat red, beans, vegetables colored red, yellow egg⁷.

Gift fruit dates can increase rate hemoglobin on mother pregnant trimester III which with anemia which given the average treatment experienced an increase of 1.10 g% dates can made as wrong one alternatives choice in fulfil need substance iron during pregnancy ⁸.

Giving fruit dates on mother pregnant to increase rate hemoglobin with an average flat increase rate hemoglobin as big 1.1%, with mark significant of 0.001. Which means show exists influence increase rate hemoglobin with gift fruit dates⁹.

Rich palm juice substance iron can increase rate hemoglobin. The content of protein, carbohydrates, and fat in date juice as well as content glucose, Ca, Fe, Zn, Cu, P, and Niacin with palmyra which is rich in Vit A content supports synthesis of hemoglobin, the content of date palm juice which is no right away too increase amount thrombocyte that is minerals like substance essential iron for hemoglobin formation. That iron soon needed for production cell blood red absorbed to in blood for channeled to marrow bones and will used for form hemoglobin for cell blood red new will tie oxygen for need metabolism cell especially to heart so that heart can carry out function with good including produce thrombopoietin hormone ⁸.

Dried dates contain substance high iron so that help increase hemoglobin levels and prevent anemia. Dates are source substance very good iron. Substance iron is component of hemoglobin inside cell blood decisive red Power support oxygen blood. With consume dates as much as 25 gr/ day for 14 days can increase hemoglobin levels in pregnant women.¹⁰

Giving juice dates Coconut to rate hemoglobin teenager Daughter with acquired anemia Average increase adolescent hemoglobin levels Princess after gift kurpapa that is 0.8600g/dl. Based on statistical tests obtained p value = 0.0005 (p <0.05). so that can concluded that There is influence gift Juice dates And coconut to enhancement hemoglobin level .¹¹

Because tablet Fe Which contained with substance iron added with consuming date juice rich will Vitamin C, so with consume both , Vitamin C can help reabsorption of Fe tablets so substance iron ones before form ferry will changed become fero so that process occurs erythropoiesis so the process of increasing hemoglobin levels. dates as heavy 100 grams contains 2.81 grams of protein, 7.1 grams of fiber , calcium 35 mg, carbohydrates 88.78 grams, vitamin C 0.4 grams and substances iron 1.02 mg. Substance iron is component of hemoglobin inside cell blood red decisive power support oxygen blood

and help overcome anemia (Sugita, 2020). Water coconut young Also contain a number of content nutrition which help process hematopoiesis. Content nutrition among others is exists sour folate, amino acids (arginine, aspartic acid, glutamic AC ID, glutamine, glycine, histidine, isoleucine, leucine, lysine,phenylalanine, proline, serine, tyrosine, tryptophan) substances iron , vitamin B12 And vitamin C. ¹¹

Dates own a number of component important which can increase rate hemoglobin for consuming it. Dates as heavy 100 grams contain 2.81 grams proteins, 7,1 grams fiber, calcium 35 mg, carbohydrates 88.78 grams, vitamin C 0.4 grams and substances iron 1.02 mg. Substance iron is component of hemoglobin inside cell blood red decisive power support oxygen blood and help overcome anaemia. ¹²

Compounds which supports the process of hematopoiesis in coconut water content young. Sour folate, vitamin B2, vitamin B6, vitamin B12, vitamin C, copper , iron , serine, threonine, and kinetin is compound in water coconut Which expected give impact positive for improvement amount thrombocyte in study this. Sourfolate And vitamin B12 is molecule which essential in process formation blood Because own role as cell nucleus. On generally sour folate will taken up by hepatocytes and cells marrow bone via active transport. On metabolic processes sour folate is at in form inactive (Methyl-tetrahydrofolate) until demethylated by vitamins B12 (Tetrahydrofolate). Role two molecule this as molecule which essential in synthesis DNA own role help increase formation cell blood in marrow one of the bones megakaryocyte which produce thrombocyte coconut water young also pregnant a number of content nutrition help the process of hematopoiesis. Content nutrition among others is exists sour folate, amino acids (arginine, aspartic acid, glutamic acid, glutamine, glycine, histidine, isoleucine, leucine, lysine, phenylalanine, proline, serine, tyrosine, tryptophan) substances iron, vitamin B12 and vitamin C ¹³.

Forming process cell blood red blood cells (erythropoiesis) and hemoglobin synthesis occurs inside marrow bone red. Substance contained iron in coconut water suspected own role as composer main bond hemoglobin chemistry being one component formation cell blood red. Substance iron with bound heme with protein globulin for form hemoglobin. ¹³

Absorption substance iron from food to be used in suspected hemoglobin formation influenced by substances another, namely vitamin C. Vitamin C contained in coconut water suspected role in improve the absorption process substance iron in body For speed up hemoglobin synthesis. Vitamin C works reduce iron ferric (Fe³⁺) to ferrous (Fe²⁺) in the small intestine so that easy absorbed. Vitamin C and substances iron form compound ascorbate iron easy complex soluble and easy absorbed for the synthesis of hemoglobin in the erythroblast. 11 Vitamin B6 is also contained in coconut water suspected role as coenzyme in reaction hemoglobin formation. Other suspected substances role in formation cell

blood red which is also found in coconut water is sour folate that has role in DNA synthesis for arrangement maturation of the erythroblast nucleus (cells found in the marrow) bone red , which will develop become erythrocytes. ¹⁴

Content nutrition in coconut water young own role important for guard health body, one of which is related with hematology, coconut water contain a number substance iron 0.2%, protein 0.2%, of content of Fe and protein so can confirmed if consumed can increase hemoglobin levels, Hemoglobin own affinity (power join) against oxygen and with oxygen that form oxyhemoglobin inside cell red blood. ¹⁵

Researcher assume that add coconut water to date juice as therapy combination on enhancement rate Hb because content of vitamin C and substances iron that makes absorption more fast. So that make linkages the more strong make juice products proven effective increase hemoglobin level. Apart from content substance iron in water coconut, available high content of vitamin C in coconut water so that absorption substance iron more maximum And rate hemoglobin can increase. Besides that reason researcher give juice because juice properties characteristic liquid so that easy consumed compared consume fruit dates intact.

CONCLUSION

There is influence drink dates (*Phoenix dactylifera .l*) And watercoconut (*Coconut water*) against maternal hemoglobin level pregnant with anemia trimester III.

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