THE CORRELATION OF MATERNAL AGE AND GESTATIONAL AGE WITH ANEMIA IN PREGNANT WOMEN AT PUSKESMAS MERAURAK, TUBAN, EAST JAVA, INDONESIA

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ABSTRACT

Anemia is an indicator of poor nutrition and poor health. Anemia in pregnant women is strongly associated with maternal and infant mortality and morbidity, including the risk of miscarriage, stillbirth, prematurity, and low birth weight. This researsh was to analyze The Correlation Of Maternal Age And Gestational Age With Anemia In Pregnant Women At Puskesmas Meraurak, Tuban, East Java, Indonesia. The research was an observational analytic with a cross-sectional approach. This research data collection tool is secondary data by looking at medical records. The time this research began in May - July 2021 at the Meraurak Health Center, Tuban. The population in this study were all pregnant women, whether anemic or not, who visited the Merakurak Tuban Health Center in 2021. The sampling technique used in this study was total sampling. The sample in this study was 30 respondents.. Data analysis in this study used Contingency Coefficient *with the help of SPSS. Significant limitation if p-value < 0.05. There is a correlation between maternal age and the incidence of anemia in pregnant women and there is no correlation between gestational age and the incidence of anemia in pregnant women. Pregnant women are advised to consume at least 90 iron tablets during pregnancy.*

Keywords *: Anemia, maternal age, gestational age*

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INTRODUCTION

The main causes of maternal death include bleeding, hypertension, infection, and indirect causes. 800 women in the world died due to complications of pregnancy and childbirth, the birth process can cause bleeding and eventually cause anemia. Nearly all of these deaths occurred due to poor resource management, and most were preventable. The risk of a woman in a developing country dying from a related cause during her lifetime is about 23 times higher than that of a woman living in a developed country.[1]

Data from the World Health Organization (WHO) 2010, 40% of maternal deaths in developing countries are related to anemia in pregnancy. Most anemia in pregnancy is caused by iron deficiency and acute bleeding, even

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though the distance between the two interacts. Anemia in pregnancy is a major health problem in developing countries with high morbidity rates in pregnant women. The average pregnancy caused by anemia in Asia is estimated at 72.6%. The high prevalence of anemia in pregnant women is a problem that the Indonesian government is currently facing.[2]

Data from the Indonesian Demographic and Health Survey (IDHS) in 2010 stated that the maternal mortality rate (MMR) in Indonesia was 220 per 100,000 live births. This figure is still far from the 2014 Medium-Term Development Plan (RPJMN) target of 2118 per 100,000 live births and the Millennium Development Goals (MDG's) target of 102 per 100,000 live births in 2015. The causes of death are: bleeding (42%), Eclampsia/ Preeclampsia (13%), abortion (11%), infection (10%), prolonged labor/labour delivery (9%), other causes (15%).[3]

Based on an initial survey conducted by researchers at the Merakurak Health Center from May to July 2018 there were 30 pregnant women and it was known that 21 pregnant women experienced anemia during pregnancy. After conducting interviews, it was concluded that some pregnant women were not obedient in consuming Fe tablets, had low education, and lacked knowledge about the importance of consuming Fe tablets for pregnant women.

The Maternal Mortality Rate (MMR) in Indonesia is still high, at 228/100,000 live births from the target of 102/100,000 live births in 2015 (MDGs Report, 2010). The MDG Achievement Report published by Bappenas in 2010 also found that since 2010 Indonesia has achieved various MDG targets. The status of achievement of the MDGs can be grouped into three categories: (a) targets that have been achieved; (b) targets that have shown significant progress and are expected to be achieved in 2015, and (c) targets that still require hard work to achieve.[1]

Mortality Mother is very influential on the condition of the family and society because the mother is the main pillar in the family who plays an important role in educating, providing health care, and helping the family economy. Anemia is an indicator of poor nutrition and poor health. Anemia in pregnant women is strongly associated with maternal and infant mortality and morbidity, including the risk of miscarriage, stillbirth, prematurity, and low birth weight.[1]

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Factors that cause anemia in pregnancy include internal factors and external factors. Internal factors that cause anemia are maternal age, education, parity, social and economic distance, birth spacing, ANC visits there are K1 (whether the mother made her first visit at the age of 1-3 months / the first trimester), K4 (whether the mother had a complete visit in trimesters 1-3), consumption of Fe tablets and external factors, namely maternal knowledge about anemia. And one of the causes of anemia in pregnancy, namely the age of the mother who is too young and too old can increase the risk of anemia in pregnancy, then parity, pregnancy interval, and consumption of Fe tablets.[1-3]

Iron deficiency is associated less favorable for mother and baby, the incidence of anemia in pregnant women will increase the risk of maternal death compared to mothers who are not anemic.[4] Anemia is a risk factor for bleeding, bleeding can be related to the production of amniotic fluid and premature rupture of the membranes (before delivery). Another is in mothers who suffer from anemia and the uterus is stretched too big because the baby is big.[2]

Anemia in pregnancy can be caused by non-compliance of pregnant women taking iron tablets and lack of knowledge about the importance of iron tablets for pregnancy. In addition, the number of parity, nutritional status of pregnant women, and the frequency of ANC also affect the incidence of anemia in pregnant women.[2]

In preventing anemia, the mother should be given sulfa ferrous or blokonas ferrous 1 tablet a day as much as 90 tablets during pregnancy. Besides that, the mother also needs to be advised to eat more foods that contain protein and iron and vegetables that contain lots of vitamins and minerals. This researsh was to analyze The Correlation Of Maternal Age And Gestational Age With Anemia In Pregnant Women At Puskesmas Meraurak, Tuban, East Java, Indonesia

MATERIAL AND METHOD

The research was an observational analytic with a cross-sectional approach. The population in this study was 30 respondents. This research data collection tool is secondary data by looking at medical records. The time this research began in January – March 2021 at the Meraurak Health Center, Tuban.[5]

The population in this study were all pregnant women, whether anemic or

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not, who visited the Merakurak Tuban Health Center in 2021. The sampling technique used in this study was total sampling.[5] total sampling, which is a sampling technique when all members of the population are used as samples. In this study, samples were taken from all pregnant women, whether anemic or not, who visited the Merakurak Health Center in Tuban in 2021. The sample in this study was 30 respondents.

The independent variables in this study were maternal age and gestational age with each ordinal scale and the dependent variable in this study was anemia in pregnant women also with ordinal data scale. Data analysis in this study used Contingency Coefficient with the help of SPSS. Significant limitation if p-value < 0.05.

RESULT

Table 1. Distribution of Respondents' Data Based on maternal age on the incidence of anemia in pregnancy at Merakurak Health Center, Merakurak, Tuban.

No	Maternal Age	*f*	%
1	< 20	6	20
2	20-35	20	67
3	> 35	4	13
	Total	30	100

Source : Secondary Data 2021

Based on table 1 above, it shows that of the 30 respondents, most of the respondents at Merakurak Health Center Tuban aged 20-35 years were 20 respondents (67%).

Table 2. Distribution of Respondent Data Based on the factor of gestational age on the incidence of anemia in pregnancy at the Merakurak Health Center, Merakurak, Tuban.

No	Gestational Age	*f*	%
1	Trimester I (0-12 minggu)	2	6,7
2	Trimester II (12-28 minggu)	12	40
3	Trimester III (28-40 minggu)	16	53,3
	Total	30	100

Source : Secondary Data 2021

Based on table 2 above, it shows that of the 30 respondents, most of them at the Merakurak Health Center for Pregnancy in the Third Trimester as many as 16 respondents (53,3%).

Table 3. Frequency distribution based on the incidence of anemia in pregnancy at Merakurak Health Center, Merakurak, Tuban.

No	Anemia	*f*	%
1	Not Anemia	9	30
2	Anemia	21	70
	Total	30	100

Source : Secondary Data 2021

Based on table 3 shows that from 30 respondents, most of the pregnant

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women at Merakurak Health Center Tuban experienced anemia as many as 21 respondents (70%).

Table 4. Analysis of the correlation between maternal age and the incidence of anemia in pregnant women

Maternal Age	Anemia			
	Not Anemia	%	Anemia	%
< 20	0	0	6	20,0
20-35	6	20,0	14	46,7
> 35	3	20,0	1	3,3
Total	9	30,0	21	70,0
p = 0,040				

The analysis using the Contingency Coefficient statistical test obtained p-value = 0.040, because the p-value <0.05 which indicates there is a correlation between maternal age and the incidence of anemia in pregnant women.

Table 5. Analysis of the correlation between gestational age and the incidence of anemia in pregnant women.

Maternal Age	Anemia			
	Not Anemia	%	Anemia	%
Trimester I (0-12 minggu)	0	0	2	6,7
Trimester II (12-28 minggu)	6	20,0	6	20,0
Trimester III (28-40 minggu)	3	10,0	13	43,3
Total	9	30,0	21	70,0
p = 0.128				

The analysis using the Contingency Coefeccient statistical test obtained p-value = 0.128, because the p-value > 0.05 which indicates there is no correlation between gestational age and the incidence of anemia in pregnant women.

DISCUSSION

The ideal age of the mother in pregnancy is in the age group of 20-35 years and at that age, there is less risk of pregnancy complications and has a healthy reproduction. This is related to the biological and psychological conditions of pregnant women. On the other hand, the age group < 20 years is at risk of anemia because in that age group biological development, namely reproduction, is not optimal. In addition, pregnancy in the age group above 35 years is a high-risk pregnancy. Pregnant women over the age of 35 are also prone to anemia. This causes the body's power to begin to decrease and it is easy to get various infections during pregnancy.[6-7]

A tendency for a negative relationship between gestational age and Hb levels of pregnant women. This is due to physiological changes in pregnancy starting at week 6, namely an increase in plasma volume which reaches its peak at week 26, resulting in a decrease in Hb levels. Generally, pregnant women are

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considered anemic if the hemoglobin level is below 11 g/dl or the hematocrit is less than 33%. In routine practice, Hb concentrations <11 g/dl at the end of the first trimester, and 10 g/dl in the second and third trimesters are proposed as lower limits for finding the cause of anemia in pregnancy. These values are approximately the same as the lowest Hb values in pregnant women who received iron supplementation, namely 11.0 g/dl in the first trimester and 10.5 g/dl in the second and third trimesters.[8]

Pregnant women are advised to consume at least 90 iron tablets during pregnancy. Iron from food cannot meet the needs during pregnancy, because iron is not only needed by the mother but also for the fetus in her womb. If pregnant women during pregnancy obediently consume Fe tablets, the risk of developing anemia will be smaller.[1] Maternal compliance plays a very important role in increasing Hb levels. The compliance includes the accuracy of the number of tablets consumed, the accuracy of how to consume, and the regularity of the frequency of consuming Fe tablets.[8]

Based on table 4.5 shows that from 30 respondents, most of the pregnant women at Merakurak Health Center Tuban experienced anemia as many as 21 respondents (70%), a small proportion of pregnant women were not anemic as many as 9 respondents (30%). Generally, pregnant women are considered anemic if the hemoglobin level is below 11 g/dl or the hematocrit is less than 33%. In routine practice, Hb concentrations <11 g/dl at the end of the first trimester, and 10 g/dl in the second and third trimesters are proposed as lower limits for finding the cause of anemia in pregnancy. These values are approximately the same as the lowest Hb values in pregnant women who received iron supplementation, namely 11.0 g/dl in the first trimester and 10.5 g/dl in the second and third trimesters.[8-9]

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Based on research at the Merakurak Health Center, most pregnant women experience anemia in the first trimester. This is because anemia occurs early in the first trimester because in first-trimester nausea and vomiting occurs, nutritional intake is lacking and will peak in the second trimester. Therefore, it is necessary to monitor Hb levels and regularly consume Fe tablets.

CONCLUSION

There is a correlation between maternal age and the incidence of anemia in pregnant women and there is no correlation between gestational age and the incidence of anemia in pregnant women. Pregnant women are advised to consume at least 90 iron tablets during pregnancy. Iron from food cannot meet the needs during pregnancy, because iron is not only needed by the mother but also for the fetus in her womb. If pregnant women during pregnancy obediently consume Fe tablets, the risk of developing anemia will be smaller. Maternal compliance plays a very important role in increasing Hb levels. The compliance includes the accuracy of the number of tablets consumed, the accuracy of how to consume, and the regularity of the frequency of consuming Fe tablets.

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