E-ISSN: 2962-6110
P-ISSN: 2964-7843
JSRET
jsret.knpub.com
Journal of Scientific Research, Education, and Technology

Anemia Prenatal is A Risk Factor for Postpartum Hemorrhage

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ABSTRACT

Postpartum Hemorrhagic is still the main cause of maternal death. While anemia is a major contributor to maternal morbidity, therefore, to prevent Postpartum Hemorrhagic (PPH), it is important to be aware of the occurrence of anemia during pregnancy. The purpose of this study was to determine the relationship between anemia in pregnancy and postpartum hemorrhagic events at the Sukodono Health Center, Sidoarjo. This research is an observational study with a cross sectional approach. The population in this study was 125 respondents, a sample of 42 respondents was obtained using purposive sampling technique. Data collection used secondary data (medical records January - December 2022). Data were analyzed using the Fisher's Exact Test statistic with a significance level of α (0.05). The results showed that the ρ-value = 0.008, meaning that ρ (0.008) < α (0.05) or H1 is accepted: there is a relationship between anemia in pregnancy and the incidence of postpartum hemorrhagic (PPH) at the Sukodono Health Center, Sidoarjo Regency. Pregnancy with anemia in the third trimester has a high risk of experiencing Postpartum Hemorrhagic, so it is necessary to increase awareness of anemia by optimizing integrated antenatal care services.

Keywords: *Anemia, Pregnancy, Postpartum Hemorrhagic (HPP)*

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INTRODUCTION

Postpartum hemorrhagic is the most common and dangerous complication of childbirth. Traditionally, postpartum hemorrhage has been defined as more than 500 mL estimated blood loss associated with vaginal delivery or more than 1000 mL estimated blood loss associated with delivery. Primary postpartum hemorrhage is bleeding that occurs in the first 24 hours after delivery, while secondary postpartum hemorrhage is characterized as bleeding that occurs 24 hours to 12 weeks postpartum (Corniawati, 2022).

According to WHO (2019) the Maternal Mortality Rate (MMR) in the world is 303,000 people. The Maternal Mortality Rate (MMR) in ASEAN is 235 per 100,000 live births (Prastika et al., 2021). According to the Indonesian Demographic and Health Survey Data

(SDKI) the Maternal Mortality Rate (MMR) in Indonesia increased from 228 per 100,000 live births in 2002-2007 to 359 per 100,000 live births in 2007-2012. The Maternal Mortality Rate (WHO, 2018) decreased in 2012-2015 to 305 per 100,000 live births and the number of maternal deaths in Indonesia in 2019 was 4,221 cases (Kemenkes, 2020a).

The most common causes of maternal death in Indonesia in 2019 are bleeding, hypertension in pregnancy, infections, metabolic disorders, and others (Ministry of Health, 2020a). Around 25-50% of maternal deaths are caused by problems related to pregnancy, childbirth and the puerperium (WHO, 2018).

Head of Community Nutrition Health (KGM) Sidoarjo Health Service, Sri Andari explained, in 2021 the maternal mortality rate in Sidoarjo district will be 0 cases. Meanwhile in 2022, the maternal mortality rate will reach 10 cases. The cause of maternal death is around 26.3% due to postpartum hemorrhagic (Sidoarjo Health Office 2022).

Anemia is a condition in which the body has too few red blood cells (erythrocytes), in which red blood cells contain hemoglobin which functions to carry oxygen throughout the body's tissues. The hemoglobin (Hb) level of pregnant women is said to be anemic if the Hb is <11 g/dl. Globally the prevalence of anemia in pregnant women worldwide is 41.8%. The prevalence of anemia in pregnant women in Asia is 48.2% (WHO, 2018).

Anemia in women giving birth can result in a low ability of the mother to survive during labour, mothers with low Hb levels tend to reduce their immune system and increase the frequency of birth complications which lead to an increased risk of postpartum hemorrhagic. The impact of anemia on labor can be His disturbance (pushing power), stage I can last a long time, stage II can also last a long time so it can be tiring and often requires surgery, stage III can occur retained placenta and Postpartum Hemorrhagic due to uterine atony, stage IV can secondary postpartum hemorrhage and uterine atony occur (Manuaba & Obstetri, 2007).

Based on data from a preliminary study conducted from September to October 2022 at PUSKESMAS Sukodono, Sidoarjo Regency, 11 mothers gave birth and 36.3% experienced bleeding. Of the 36.3% of mothers who experienced bleeding, they had Hb levels <11 g% during the third trimester of pregnancy.

Therefore, to reduce maternal mortality caused by postpartum hemorrhagic, it is necessary to monitor periodic Hb checks, fulfill nutrition during pregnancy (giving milk to pregnant women from the health center during monitoring), collaborate with village midwives to conduct classes for pregnant women.

From the preliminary study that has been carried out, the researchers are interested in seeing the relationship between anemia in pregnant women and postpartum hemorrhagic events, where as explained, low hemoglobin levels in pregnant women are a risk factor for postpartum hemorrhagic events. Postpartum hemorrhagic is a major cause of maternal death which must be prevented by early detection of risk factors so that the Maternal Mortality Rate (MMR) in Indonesia decreases as an indicator of the success of maternal health efforts in Indonesia.

METHOD

This research is an observational study, namely by observing the subject being studied. The observation method used in this study is the cross-sectional observation method where each research item is carried out simultaneously (Notoatmodjo, 2018). The population in this study were all pregnant women who gave birth at the Sukodono Sidoarjo Health Center in 2022 with a total of 125 respondents. Using the Purposive Sampling Technique, a sample of 42 respondents was obtained with the following inclusion criteria: 1) Mothers with vaginal delivery, 2) Mothers who experienced HPP (more than 500 cc for less than 24 hours postpartum), 3) HB examination was carried out in TM pregnancies III, 4) Complete medical record data. Data collection techniques and procedures used Secondary Data (Medical Records) of the Sukodono Sidoarjo Health Center for the 2022 period. Data analysis used the Fisher's Exact Test.

FINDING AND DISCUSSION

Table 1: Mengidentifikasi kejadian anemia dalam kehamilan

Anemia Incidence	Total	Percentage
Not Anemia	12	28.6 %
Anemia	30	71.4 %
Total	42	100 %

Source: Secondary Data 2023

Table 2: Identify the incidence of anemia in pregnancy

Postpartum Hemorrhagic incident (PPH)	Total	Percentage
PPH did not occur	12	28.6 %
PPH occur	30	71.4 %
Total	42	100 %

Source: Secondary Data 2023

Table 3: Analyzing the relationship between anemia in pregnancy and the incidence of postpartum hemorrhagic (PPH)

Anemia Incidence	PPH incident				Total		*Fisher's Exact Test*
	Occur		Not occur				
	F	%	F	%	F	%	
Anemia	18	42.9	12	28.6	30	71.4	ρ (0,008)
Not Anemia	12	28.6	0	0	12	28.6	
Total	30	71.4	12	28.6	42	100	

Source: Secondary Data 2023

Based on table 1 it shows that there is an incidence of anemia in pregnancy as many as 30 respondents (71.4%). Anemia in pregnancy is a global health problem. While some degree of dilution anemia is part of normal pregnancy physiology, anemia can have adverse health consequences for both mother and child. Thus, it is very important to differentiate iron deficiency anemia from physiological anemia, as well as to identify other, less common causes of anemia that may require treatment. Individuals with anemia should be evaluated for the cause; Of the possible causes, iron deficiency is the most common. Pregnant women who are at risk of developing anemia are pregnant women with a previous diagnosis of iron deficiency, multipara, especially those with <6 months between pregnancies, history of abnormal uterine bleeding, body mass index (BMI) above or below the normal range (Auerbach et al., 2020). According to the researchers, in this study there is compatibility between facts and theories. Mothers who give birth more than three times are at risk of experiencing bleeding complications which can be affected by anemia during pregnancy and the risk of recurrent bleeding in subsequent pregnancies due to decreased hemoglobin levels.

Based on table 2 it shows that there were 30 respondents (71.4%) of Hemorrhagic Postpartum (HPP). Hemorrhagic Postpartum is defined as blood loss of 1,000 mL or more or signs and symptoms of hypovolemia within the first 24 hours after delivery and up to 12 weeks postpartum, regardless of the method of delivery either vaginally or caesarean section (Gynecologists, 2017). The most common etiology in postpartum hemorrhage is multiparity and the patient's young age (Ambounda et al., 2021). Postpartum Hemorrhagic which can cause maternal death is a risk factor for women who give birth before the age of 20 or more than 35 years. This is because the development of the female reproductive organs is not fully mature from a biological point of view when they are less than 20 years old, so they are often disturbed emotionally and medically and immature morally (Kasiati, 2017). With increasing parity, the strength of women's myometrial muscles can decrease due to a reduction in collagen fibers, mothers are at risk of experiencing uterine atony so that Postpartum Hemorrhagic can occur (Pradana & Asshiddiq, 2021)

The results of the analysis based on table 3 using the Fisher's Exact Test show a ρ-value of 0.008 <α 0.05 which means that there is a fairly strong relationship between anemia in pregnancy and the incidence of Postpartum Hemorrhagic at the Sukodono Health Center, Sidoarjo in 2022.

Anemia in pregnancy is a global health problem. Thus, it is very important to differentiate iron deficiency anemia from physiological anemia. Individuals with anemia should be evaluated for the cause; Of the possible causes, iron deficiency is the most common. Iron Deficiency Anemia is a common contributor to postpartum hemorrhage. The body during pregnancy needs more iron than a person who is not pregnant. Hemoglobin must be greater than 11 g/dL during the first and third trimesters, and greater than 10.5 g/dL in the second trimester (Faysal et al., 2022). The reason why this is a problem during pregnancy is that the plasma volume expands which in turn lowers the hemoglobin concentration (Shields et al., 2017). Therefore, an increase in iron intake is needed during pregnancy. The management of iron deficiency anemia is proven to be protective against

Postpartum Hemorrhagic (Gynecologists, 2017). Postpartum Hemorrhagic is generally defined as blood loss of more than or equal to 500 ml within 24 hours after birth, whereas severe Postpartum Hemorrhagic is blood loss of more than or equal to 1000 ml within 24 hours. Postpartum Hemorrhagic is the most common cause of maternal death worldwide. Most cases of morbidity and mortality due to Postpartum Hemorrhagic occur within the first 24 hours after delivery and this is considered as primary HPP while abnormal or excessive bleeding from the birth canal that occurs between 24 hours and 12 weeks postpartum is considered as secondary Postpartum Hemorrhagic (Fegita & Satria, 2018).

In Anemia, cellular dysfunction causes impaired transport of hemoglobin and oxygen to the uterus due to impaired myometrial contractility. As a result, decreased uterine blood flow causes inadequate uterine contractions. If uterine contractions are not effective, uterine atony occurs and causes postpartum hemorrhage. In total, the management of anemia is proven to be protective against Postpartum Hemorrhagic (Güngördük et al., 2018).

However, it is also found in table 4.6 that a small proportion of respondents with Postpartum Hemorrhagic did not experience anemia. According to the Indonesian Ministry of Health, mothers who give birth at the age of <20 years or> 35 years are a risk factor for Hemorrhagic Postpartum which results in maternal death. This is because at the age of <20 years a woman's reproductive function has not developed properly. Meanwhile, at the age of >35 years, the reproductive function of the mother has decreased compared to normal reproductive function. As a result, the possibility of postpartum complications, especially bleeding, will be greater (Kemenkes, 2020). This is in accordance with table 4.1 which shows that almost half of the respondents are aged <20 years. A healthy reproductive age is between 20-35 years, because at the age of <20 years the reproductive organs are not yet perfect, so the nutrients needed for the growth of the mother's reproductive organs are divided into the needs of the fetus during pregnancy. On the other hand, at the age > 35 years, the mother's health condition begins to decrease. Complications such as hypertension, diabetes mellitus and fatigue easily, it is at risk if the mother is pregnant.

The results of cross-tabulation of the relationship between parity and HPP showed that the majority of mothers were multiparous. Parity is one of the factors that influence the incidence of postpartum hemorrhage. Parity denotes the number of previous pregnancies that have reached the limit of viability and have been delivered regardless of the number of children. Multipara can cause unpreparedness for mothers in facing childbirth so that pregnant women cannot deal with complications that occur during pregnancy, childbirth and postpartum. Meanwhile, the more frequently women experience pregnancy and childbirth (parity greater than 3), the weaker the uterus, so the risk of pregnancy complications is greater. High parity is one of the risk factors for postpartum hemorrhage (Manuaba, 2015). Women with high parity who are in labor tend to have uterine atonity, Physiologically, the uterus in multiparas does not work efficiently. Contractions tend to be discoordination or hypotonic. Grande multiparas experience a longer latency phase of labor than nulliparas or multiparas.

CONCLUSION

Based on the results of research conducted by researchers at the Sukodono Sidoarjo Health Center in 2022, the researchers can draw the following conclusions: There is a relationship between anemia in pregnancy and postpartum hemorrhagic (HPP) events at the Sukodono Sidoarjo Health Center in 2022, with a significant level of ρ (0.008) < α (0.05).

Pregnancy with anemia in the third trimester has a high risk of experiencing Postpartum Hemorrhagic, so it is necessary to increase awareness of anemia by optimizing integrated antenatal care services.

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