



ANALYSIS OF THE RELATIONSHIP ANEMIA AND POSTPARTUM HEMORRHAGE IN ABDUL MOELOEK HOSPITAL, LAMPUNG

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ABSTRACT

The high prevalence of anemia affects almost all age groups in society. One of the groups of people with a high prevalence is pregnant women in various countries including Indonesia, reporting that the prevalence of anemia in the world is estimated at 30% of the world's population and around 500 million people are believed to suffer from anemia. Pregnancy anemia is called "potential danger to mother and child", which is why anemia requires serious attention from all parties involved in health services. Bleeding is the main factor causing high MMR. Bleeding can occur during pregnancy, childbirth and postpartum. Anemia is one of the risk factors that can worsen the mother's condition if accompanied by bleeding during pregnancy, childbirth and postpartum. Postpartum hemorrhage is still one of the causes of maternal death, which is 28%. Untreated postpartum hemorrhage can result in hemorrhagic shock, puerperal infection, and postpartum anemia. One of the predisposing factors of postpartum hemorrhage is anemia in pregnancy.

This study aims to identify the relationship between anemia and postpartum hemorrhage in mothers. This study uses a quantitative approach with cross sectional and data analyzed univariately and bivariately. The subjects in this study were mothers giving birth at Abdul Moeloek Hospital, Lampung Province. The technique used in this study is a random sampling technique, namely subjects selected and taken randomly through a lottery. Data collection using secondary data and data analysis using Chi Square correlation.

Keywords: Anemia; Postpartum Hemorrhage

Introduction

According to WHO, the Maternal Mortality Rate (MMR) in the world is 303,000 people. (Febriani et al., 2022). The maternal mortality rate in ASEAN is among the highest in the world. WHO estimates that the total MMR and IMR are around 170 thousand and 1.3 million per year. As many as 98% of all MMR and IMR occur in Indonesia, Bangladesh, Nepal, and Myanmar. Indonesia as a developing country still has a fairly high maternal mortality rate.¹

The high prevalence of anemia affects almost all age groups in society. One of the groups of people with a high prevalence is the group of pregnant women in various countries including Indonesia, reporting that the prevalence of anemia in the world is estimated at 30% of the world's population and around 500 million people are believed to suffer from anemia. Pregnancy anemia is called "potential danger to mother and child", which is why anemia requires serious attention from all parties involved in health services.³

The high incidence of anemia is closely related to nutritional factors during pregnancy, therefore improving diet is an important strategy to overcome anemia, too close a pregnancy gap, because the mother's iron reserves that have not actually recovered will be depleted for the needs of the next fetus. The high prevalence of anemia has negative consequences such as disorders and obstacles to growth, both body cells and brain

cells, lack of Hb in the blood results in a lack of oxygen being carried/transferred to body cells and to the brain. Pregnant women who suffer from anemia are likely to experience postpartum hemorrhage.²

The impact of anemia on the fetus includes abortion, intrauterine death, prematurity, low birth weight, congenital defects and easy infection. In the mother, during pregnancy it can cause abortion, premature birth, threat of cord decompensation and premature rupture of membranes. During labor it can cause impaired contractions, placental retention and postpartum hemorrhage due to uterine atony. Bleeding is the main factor causing high MMR. Bleeding can occur during pregnancy, labor and postpartum. Anemia is one of the risk factors that can worsen the mother's condition if accompanied by bleeding during pregnancy, labor and postpartum.⁴

Set Every delivery is related to bleeding, because all deliveries, whether vaginal or abdominal (cesarean section) are always accompanied by bleeding. In vaginal delivery, bleeding can occur before, during or after delivery. Bleeding is said to be physiological if the blood loss does not exceed 500 cc in vaginal delivery and not more than 1000 cc in cesarean section.

Postpartum hemorrhage is still one of the causes of maternal death, which is 28%. Untreated postpartum hemorrhage can result in hemorrhagic shock, puerperal infection, and postpartum

anemia. One of the predisposing factors for postpartum hemorrhage is anemia in pregnancy.⁵

Based on the results of the 2016 Sample Registration System (SRS) of the Health Research and Development Agency, the three main causes of maternal death were hypertension disorders (33.07%), obstetric hemorrhage (27.03%) and non-obstetric complications (15.7%). Meanwhile, based on Maternal Perinatal Death Notification (MPDN) data dated September 21, 2021, the top three causes of maternal death were Eclampsia (37.1%), Hemorrhage (27.3%), Infection (10.4%) with the highest place/location of death being in Hospital⁶

Pre-survey conducted by researchers at Abdoel Moeloek Regional Hospital Lampung Province Data was obtained from 20 mothers who experienced postpartum hemorrhage, the data obtained were: 12 mothers (60%) experienced anemia and 8 mothers (40%) did not experience anemia. Based on the background above, the author is interested in conducting research on "The Relationship between Anemia and Postpartum Hemorrhage Incidents at Abdoel Moeloek Regional Hospital, Lampung Province".

Methods

The design used in this study is analytical observational research with cross sectional approach, namely an analytical study (survey) to study the dynamics of the correlation between risk factors and effects, by means of an approach,

observation or data collection at one time (point time approach). This study was conducted at the Abdoel Moeloek Hospital, Lampung Province and the time of the study was conducted in 2024. The population in this study were all mothers giving birth at the Abdul Moeloek Hospital, Lampung Province in 2023, totaling 1,435 mothers giving birth. The sample taken in the study was 313 mothers. The sampling technique used was simple random sampling. Simple random sampling is a simple random sampling technique so that each member or unit of the population has an equal opportunity to be selected as a sample (Notoatmodjo, 2010). The sampling was carried out by sorting the respondent numbers from 1 to 1435 then randomly taking 313 respondents.

Results and Discussion

Based on research conducted at Abdul Moeloek Regional Hospital regarding the relationship between anemia and postpartum hemorrhage, the following data was obtained:

Anemia	Postpartum Hemorrhage				Amount Σ		p value	OR (CI =95 %)
	Bleeding		No Bleeding		n	%		
	n	%	n	%				
Anemia	44	32.4	92	67.6	136	100	0.031	1,810 (1,06-3,01)
No Anemia	37	20.9	140	79.1	177	100		
Amount	81	25.9	232	74.1	313	100		

The statistical test results obtained p value = 0.031 ($< \alpha$ 0.05) which means there is a significant relationship between anemia and the incidence of postpartum hemorrhage at Abdul Moeloek Hospital, Lampung Province. The analysis of the closeness of the relationship between the two variables is shown by OR 1.810 (CI 95%: 1.086 - 3.014), which means that respondents with anemia are 1.810 times more at risk of experiencing postpartum hemorrhage than respondents who are not anemic.

The results of the analysis of the relationship between anemia and postpartum hemorrhage at Abdul Moeloek Hospital, Lampung Province, on 313 respondents showed that out of 136 respondents with anemia, 44

respondents (32.4%) experienced postpartum hemorrhage, while out of 177 respondents who were not anemic, 37 respondents (20.9%) experienced postpartum hemorrhage. The results of statistical testing obtained a p value = 0.031 ($< \alpha$ 0.05), which means that there is a significant relationship between anemia and the incidence of postpartum hemorrhage at Abdul Moeloek Hospital, Lampung Province in 2015. The analysis of the closeness of the relationship between the two variables is shown by OR 1.810 (CI 95%: 1.086 - 3.014), which means that respondents with anemia are at 1.810 times greater risk of experiencing postpartum hemorrhage than respondents who are not anemic.

Pregnant women experience increased blood and fluid volumes, so losing 500 ml of blood in a healthy woman after giving birth does not cause serious effects. However, even a smaller amount of blood loss can have dangerous consequences in anemic women (Oxorn, 2014).

Anemia that is not treated quickly can cause a number of diseases that are dangerous to the health of new mothers during pregnancy, childbirth, and even postpartum. Anemia increases the risk of postpartum hemorrhage in pregnant and postpartum women. Because of the large amount of blood that comes out during postpartum hemorrhage, improper treatment can result in shock and decreased consciousness. Severe hypovolemia can occur due to obstructed

blood flow throughout the body as a result. Maternal death will occur if this continues ⁷

Pregnancy anemia is called "potential danger to mother and child", that is why anemia requires serious attention from all parties involved in health services (Astutik, 2018). Anemia can reduce hemoglobin levels which reduce the amount of oxygen bound in the blood and reduce oxygen delivery and coverage, increasing the risk of postpartum hemorrhage in women giving birth with anemia ⁸

Postpartum hemorrhage is caused by anemia in pregnancy. This happens because when the mother gives birth, there will be enough uterine contractions to be born. In pregnant women who are anemic with hemoglobin below 10, the risk of bleeding due to hypotonia or atonia is quite large, around 20-25%, the more bleeding, the hemoglobin level decreases, making the uterus contract requiring energy and oxygen supplied by the blood. While the supply of these needs is getting thinner, the ability to contract is getting weaker ⁹

According to the researcher's opinion based on the results of the study, it can be concluded that statistically there is a significant relationship between anemia and postpartum hemorrhage. The proportion of the largest bleeding in the category of respondents who are anemic is 32.4% while respondents who are not anemic and experience bleeding are 20.9%. Anemia is one of the triggers for bleeding, because the amount of oxygen bound in the blood is lacking. So the

amount of oxygen sent to the uterus is also lacking. This causes the uterine muscles to not contract adequately so that postpartum bleeding occurs. The occurrence of anemia can be overcome by conducting regular pregnancy checks and consuming iron tablets during pregnancy

Conclusion

Based on the research results and discussions that have been presented above, the author can draw the conclusion that the relationship between anemia and the incidence of postpartum hemorrhage at Abdul Moeloek Regional Hospital, Lampung Province in 2015 (p value $0.031 < \alpha 0.05$ with an OR value of 1.810) with error rate (α) 5% then H_0 is rejected, H_a is accepted.

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