Eduvest – Journal of Universal Studies
Volume 2 Number 4, April, 2022
p- ISSN 2775-3735- e-ISSN 2775-3727

THE RELATIONSHIP OF PREGNANCY ANEMIA WITH PRIMARY *POSTPARTUM HEMORRHAGE* IN TARAKAN, NORTH KALIMANTAN

Ririn Ariyanti [1], Selvia Febrianti [2], Ely Rahmawati[3]
[1.2]Midwifery Department, Borneo Tarakan University, Indonesia
[3]Midwifery Department, Poltekkes Ministry of Health, Eeast Kalimantan, Indonesia
Email: ririn_ariyanti@borneo.ac.id, selvia.febri11@borneo.ac.id, el.rahmahadi@gmail.com

ARTICLE INFO

Received:
March, 26th 2022
Revised:
April, 16th 2022
Approved:
April, 17th 2022

ABSTRACT

Bleeding in childbirth is caused by anemia in pregnancy. This happens because when the mother gives birth, there will be adequate uterine contractions to be born. This study aims to determine the relationship between anemia during pregnancy and the incidence of primary postpartum hemorrhage. This type of research is analytical survey research. The subjects in this study were all pregnant women who suffered from anemia. The research place of the Juata Community Health Center in Tarakan City, North Kalimantan. From May to June 2020. The data used in this study is secondary data obtained from medical record books at the Juata Community Health Center. This study used a total sampling technique—data analysis using chi-square analysis. The statistical tests showed that pregnant women with anemia had an 11,253 times greater risk of bleeding during childbirth than women who gave birth vaginally. Pregnant women and their families should take care of their pregnancy by routinely carrying out antenatal care under antenatal care service standards

KEYWORDS

anemia, postpartum hemorrhage, postpartum hemorrhage

How to cite: Ririn Ariyanti, Selvia Febrianti, Ely Rahmawati. (2022). The Relationship of Pregnancy Anemia with Primary Postpartum Hemorrhage in Tarakan, North Kalimantan. Journal Eduvest. *Vol* (2): 698-703
E-ISSN: 2775-3727
Published by: https://greenpublisher.id/

INTRODUCTION

Maternal Mortality Rate is one indicator to see the success of maternal health efforts. Mother death is the ratio of deaths during pregnancy, childbirth and the puerperium caused by pregnancy, delivery and postpartum or its management but not due to other causes such as accidents or falls in every 100,000 live births. In addition to assessing maternal health programs, this indicator can also assess the degree of public health, because of its sensitivity to improving health services, both in terms of accessibility and quality. In general, there was a decrease in maternal mortality from 1991-2015 from 390 to 305 per 100,000 live births. Although there is a downward trend in the Maternal Mortality Rate, it has not succeeded in achieving the MDGs target, which must be achieved at 102 per 100,000 live births in 2015 (Cameron et al., 2019)

Efforts to accelerate the reduction of maternal mortality can be made by ensuring that every mother can access quality maternal health services, such as health services for pregnant women, delivery assistance by trained health workers in health care facilities, postpartum care for mothers and babies, special care and referrals. in case of complications and family planning services, including postnatal family planning (Indonesian Health Ministry, 2021)

According to the World Health Organization, the cause of maternal mortality is 81% due to complications during pregnancy and childbirth, and 25% of maternal deaths are caused by postpartum hemorrhage and an estimated 100,000 deaths each year. The maternal mortality rate in Indonesia is relatively high. In Southeast Asia, Indonesia ranks second after Laos. The causes of death in Indonesia are bleeding 28%, eclampsia 24%, infection 11%, abortion 5%, prolonged labor 5%, embolism 3%, puerperal complications 8%, and the rest due to other causes (Indonesia, 2014). Meanwhile, in Tarakan, North Kalimantan, bleeding is the most significant contributor to the maternal mortality rate, which is 50% (Indonesian Health Ministry, 2021)

Postpartum hemorrhage is caused by anemia in pregnancy. This happens because when the mother gives birth, there will be adequate uterine contractions to be born. In pregnant women who are anemic with hemoglobin below 10, the risk of bleeding due to hypotonia or atony is considerable, around 20-25 %—the more bleeding, the hemoglobin level decreases. Making the uterus contract takes energy and oxygen supplied by the blood. While the supply of these needs is getting thinner, the ability to contract is weaker (Watkins & Stem, 2020). Not only causing maternal death, but anemia in pregnant women can also increase the risk of premature birth, infant mortality, and infectious diseases. Iron deficiency anemia in the mother can affect the growth and development of the fetus/infant during pregnancy and after (Indonesian Health Ministry, 2021)

The 2018 Basic Health research results state that in Indonesia, 48.9% of pregnant women experience anemia. As many as 84.6% of anemia in pregnant women occurred in 15-24 years. To prevent anemia, every pregnant woman is expected to get a minimum of 90 tablets for blood during pregnancy. The coverage of giving blood-added tablets to pregnant women in Indonesia in 2018 was 81.16%. This figure has not yet reached the 2018 strategic plan target of 95%. The province with the highest coverage of giving blood supplement tablets to pregnant women was Bengkulu (99.49%), while the province with the lowest coverage was Banten (32.11%). The coverage of administration of blood-added tablets in the province of North Kalimantan is 84.19%, this shows that the coverage of blood-added tablets in North Kalimantan is above the coverage of blood-added tablets in Indonesia (Indonesian Health Ministry, 2021)

Based on a preliminary study at the Juata Community Health Center, the incidence of anemia in pregnant women throughout 2021 (January-February) was 11 cases, and 1

case experienced primary postpartum hemorrhage. This study aims to determine the relationship between anemia during pregnancy and the incidence of primary postpartum hemorrhage.

RESEARCH METHOD

This type of research is analytical survey research. The subjects in this study were all pregnant women who suffered from anemia. The research place of the Juata Community Health Center in Tarakan City, North Kalimantan. From May to June 2020. The data used in this study is secondary data obtained from medical record books at the Juata Community Health Center. Sampling in this study used a total sampling technique. Data analysis using chi-square analysis.

RESULT AND DISCUSSION

The subjects of this study were 271 pregnant women who checked themselves at the Juata Tarakan Health Center, North Kalimantan, in 2020. The frequency distribution of research subjects showed that most of 194 (71.4%) were pregnant more than once or multigravida, most of the pregnant women were of reproductive age 20 -35 years 213 (78.6%), most of the pregnant women did not experience anemia 226 (83.4%), almost all of the pregnant women gave birth typically 250 (92.3%), almost half of the respondents gave birth at the Public health centre 151 (55,7%), a small proportion of respondents 17 (6.3%) had complications at the time of delivery, and 35 (12.9%) experienced bleeding at the time of delivery.

Table 1. Characteristics of respondents

Variable	n	%
parity		
Primigravida	77	28.4
multigravida	194	71.4
Age		
20-35 years old	213	78,6
<20 years & >35 years	58	21,4
Anemia		
No anemia	226	83,4
Anemia	45	16,6
Type of Delivery		
Vaginal	250	92,3
Sectio Caesarea	21	7,7
Place of Delivery		
Hospital	78	28,8
Public health center	151	55,7
Klinik	13	4,8
PMB	29	10,7
Labor Complications		
No complications	254	93,7
complications	17	6,3
Postpartum Bleeding		
No Bleeding	236	87,1
Bleeding	35	12,9

Table 2. relationship between anemia and postpartum hemorage

Anemia	Postpartum Bleeding		Odd Ratio	CI 95%
	No Bleeding	Bleeding		
Anemia				
No Anemia	211(93,4%)	15 (6,6%)	11,253	5,120-24,732
Anemia	25 (55,6%)	20 (44,4%)	1	

The statistical tests showed that pregnant women with anemia had an 11,253 times greater risk of bleeding during childbirth than women who gave birth vaginally.

Tabel 3. confounding variable

Variabel	Postpartum Bleeding		Odd Ratio	p-value
	No Bleeding	Bleeding		
parity				
Primigravida	71(92,2%)	6 (7,8%)	2,080	0,159
Multigravida	165 (85,1%)	29(14,9%)	1	
Age (years)				
20-35	187(87,8%)	26(12,2%)	1,321	0,511
<20 & >35	49 (84,5%)	9(15,5%)	1	
Type of Childbirth				
Vaginal	215(86%)	35 (14%)	0,860	0,134
Sectio Caesarea	21(100%)	0 (0%)	1	

The statistical tests showed that parity, age and type of delivery had no relationship with maternal bleeding.

Discussion

The incidence of labor bleeding in pregnant women with anemia at the Juata Public Health Center in Tarakan City throughout 2020 was 44.4%. Pregnancy anemia had a significant effect on the incidence of postpartum hemorrhage with p-value = 0.00 and OR = 11.253. This means that mothers with anemia in pregnancy have a risk of postpartum hemorrhage 11.253 times greater than mothers who are not anemic. wherefrom the research he conducted showed a significant relationship between anemia and postpartum hemorrhage, with anemia at risk of experiencing postpartum hemorrhage 17.6 times for postpartum hemorrhage to occur compared to mothers who did not experience postpartum hemorrhage anemia (Wardani, 2017).

Pregnant women with anemia are unable to meet the body's iron needs, so it can cause interference and inhibition of body cells, including brain cells and cause health problems for the mother and fetus (Suryanarayana et al., 2017). The following is the impact of anemia in pregnancy according to various sources and experts, including anemia in pregnancy can lead to miscarriage, premature birth, low birth weight, bleeding before and after childbirth can even cause maternal and child death, the impact of anemia on pregnancy varies from very mild complaints to disturbances in the continuity of pregnancy (abortion, immature or premature labor), disorders of the delivery process (atonia, prolonged labor, bleeding), disorders during the puerperium (sub involution of the uterus, resistance to infection, stress, and milk production) low), and fetal disorders (dysmaturity, microsomes, low birth weight, perinatal death, etc.) (Sataloff et al., 2020).

Mothers who suffer from anemia in pregnancy have fewer red blood cells than needed. Without enough red blood cells or a reduced adequate number of red blood cells, the

blood will not clot (Raisa Aringazina & Gulnara Kurmanalina, 2021). This means a person can bleed excessively, even if only slightly injured. Mothers who enter labor with low hemoglobin (Hb) concentrations may experience an even more rapid drop in Hb if bleeding occurs, however small (Wardani, 2017).

Anemia occurs in 1/3 of women during the third trimester of pregnancy. Common causes are iron and folic acid deficiency. The amount of blood in a pregnant woman's body increases by 20-30%, thus requiring an increase in iron supply. It is crucial to do a hemoglobin test to detect anemia in this period. Anemia in pregnant women significantly affects the condition of the mother and fetus during the delivery process (Stephen et al., 2018). Pregnant women who suffer from severe anemia can increase the risk of maternal and infant morbidity and mortality, the chances of giving birth to babies with low birth weight and premature are also greater (Hakimi & Helmyati, 2011).

There will be changes in hematological and biochemical values in progressive iron-deficiency anemia. The first thing that happens is a decrease in iron stores in the tissues. This decrease will be indicated by serum ferritin, a protein that binds iron in the body as storage. Then the amount of serum iron will decrease, the iron-binding capacity of the serum (serum transferrin) will increase, and transferrin saturation will drop below normal (Bata et al., 2021).

As stores decrease, iron and protoporphyrin fail to form heme. Free erythrocyte protoporphyrins (FEP) accumulate, and hemoglobin synthesis is impaired. At this point, iron deficiency progresses to iron deficiency anemia. With reduced hemoglobin in each cell, the red cells become smaller. These morphological changes most often appear in conjunction with a decrease in the mean corpuscular volume (MCV) and the mean corpuscular hemoglobin (MCH).

Changes in the size variation of red blood cells occur with the replacement of normocytic cells with microcytic cells; this variation is indicated by the increase in red blood cell distribution width (RDW). The number of red blood cells will also decrease. The reticulocyte count will increase slightly or maybe be normal. A blood smear will show hypochromic and microcytic red cells with constant cell variation. The elliptical or cigar-like shape of the blood cells is often seen. Detection of increased transferrin receptors and reduced reticulocyte hemoglobin concentration supports the diagnosis of iron deficiency anemia (Fitriany & Saputri, 2018).

However, the variables of age, parity and type of delivery in this study did not have an effect on the incidence of postpartum hemorrhage at the Juata Public Health Center, Tarakan City; this was not following the research conducted by Wardani where the three variables had a relationship with the incidence of postpartum hemorrhage. With many studies proving that anemia of pregnancy affects the incidence of postpartum hemorrhage, it is a particular concern for health workers, especially midwives, to always carry out hemoglobin checks as a supporting examination in the first and third trimesters so that if anemia occurs in pregnancy, it can be immediately detected and treated. In addition, pregnant women are also required to consume a minimum of 90 tablets for blood during pregnancy (Kementrian Kesehatan RI, 2020).

CONCLUSION

Anemia of pregnancy has a significant effect on the incidence of postpartum hemorrhage with a value where mothers with anemia in pregnancy have a risk of postpartum hemorrhage 11.253 times greater than mothers who are not anemic. Suggestions for pregnant women and their families should be to maintain their pregnancy with regular efforts to carry out prenatal care following antenatal care service standards.

Health workers should prevent anemia in pregnancy to prevent postpartum hemorrhage.

REFERENCES

Bata, V. A., Astuti, V. I., & Mustamu, A. C. (2021). KEPUASAN SAAT PELAKSANAAN PERSALINAN. *Jurnal Ilmu Keperawatan Jiwa*, *4*(3), 487–494. https://journal.ppnijateng.org/index.php/jikj/article/view/1046

Cameron, L., Suarez, D. C., & Cornwell, K. (2019). Understanding the determinants of maternal mortality: An observational study using the Indonesian Population Census. *PLOS ONE*, *14*(6), e0217386. https://doi.org/10.1371/journal.pone.0217386

Fitriany, J., & Saputri, A. I. (2018). Anemia Defisiensi Besi. *Kesehatan Masyarakat*, *4*(1202005126), 1–30.

Hakimi, M., & Helmyati, S. (2011). Pelayanan antenatal care dalam pengelolaan anemia berhubungan dengan kepatuhan ibu hamil minum tablet besi. *Jurnal Gizi Klinik Indonesia*, *8*(1), 7–13.

Indonesian Health Ministry. (2021). *Rekomendasi Angka Kematian Ibu di Indonesia*. Direktorat P2PTM. http://p2ptm.kemkes.go.id/artikel-ilmiah/rekomendasi-angka-kematian-ibu-di-indonesia

Kementrian Kesehatan RI. (2020). *Pedoman pelayanan Antenatal terpadu edisi ketiga*.

Raisa Aringazina, & Gulnara Kurmanalina. (2021). *Impact of Anemia in Pregnant Women on the Neonatal Conditions | Open Access Macedonian Journal of Medical Sciences*. *9*(B). https://doi.org/10.3889/oamjms.2021.6751

Stephen, G., Mgongo, M., Hussein Hashim, T., Katanga, J., Stray-Pedersen, B., & Msuya, S. E. (2018). Anaemia in Pregnancy: Prevalence, Risk Factors, and Adverse Perinatal Outcomes in Northern Tanzania. *Anemia*, *2018*, 1846280. https://doi.org/10.1155/2018/1846280

Suryanarayana, R., Chandrappa, M., Santhuram, A. N., Prathima, S., & Sheela, S. R. (2017). Prospective study on prevalence of anemia of pregnant women and its outcome: A community based study. *Journal of Family Medicine and Primary Care*, *6*(4), 739–743. https://doi.org/10.4103/jfmpc.jfmpc_33_17

Wardani, P. K. (2017). Faktor-Faktor yang Mempengaruhi Terjadinya Perdarahan Pasca Persalinan. *Jurnal Aisyah : Jurnal Ilmu Kesehatan*, *2*(1), 51–60. https://doi.org/10.30604/jika.v2i1.32

Watkins, E. J., & Stem, K. (2020). Postpartum hemorrhage. *Journal of the American Academy of PAs*, *33*(4), 29–33. https://doi.org/10.1097/01.JAA.0000657164.11635.93