Relationship between Anemia and Placenta Previa with Intrauterine Fetal Death at RSKDIA Pertiwi Makassar City in 2022

Ricda Nurhikmayanti Hamzah [1], Risna Yunita Asmin [2]

[1,2] Fakultas Ilmu Kesehatan, Prodi D3 Kebidanan Universitas Islam Makassar, Indonesia

ARTICLE INFO	ABSTRACT
Keywords: *Intrauterine Fetal Death,* *Anemia,* *Plasenta Previa.*	The high fetal mortality rate is a problem that must be solved. Intrauterine Fetal Death can be caused by various factors including maternal factors, fetal factors, and placental factors. Maternal factors include age, post term pregnancy (> 42 weeks) and diseases suffered by the mother such as anemia, eclampsia, rupture of membranes and others. However, the cause of fetal death needs to be explored so that it can find out concrete steps to reduce fetal mortality as it should. The purpose of this study was to determine the relationship between Anemia and Placenta Previa with Intrauterine Fetal Death at RSKDIA Pertiwi Makassar City. This research method uses a type of research with a case control approach. The population was all mothers who performed pregnancy checks totaling 3,964 pregnant women. With samples, namely the case group: mothers who were diagnosed with domestic violence amounted to 24 mothers, and the control group: mothers who were not diagnosed with domestic violence as many as 24 mothers, so that the total number of samples was 48 mothers. The data analysis was carried out using the chi-square statistical test. The results of the study of the relationship between Anemia and Intrauterine Fetal Death obtained a p value = 0.042 greater than $\alpha = 0.05$, this means Ho accepted Ha rejected, while the relationship between Placenta Previa with intrauterine fetal death obtained a p value = 0.365 greater than $\alpha = 0.05$ which means Ho accepted and Ha rejected. The conclusion of this study is that there is no relationship between anemia and Intrauterine Fetal Death and there is no relationship between placenta previa and Intrauterine Fetal Death.
Email : risna_ya@uim-makassar.ac.id	

1. INTRODUCTION

The level of maternal and child health is one of the indicators in a country, maternal and perinatal mortality rates are still high, one of the important factors in efforts to reduce these rates by providing quality maternal and perinatal health services to the community [1].

Domestic violence is one of the causes of perinatal death. KJDR is included in the problem of infant mortality rate (IMR) which is one of the important indicators to assess the level of welfare of a country. Intrauterine fetal death can be caused by several factors, namely maternal factors, fetal factors, and placental factors. Maternal factors include age, post term pregnancy (> 42 weeks) and diseases suffered by the mother such as anemia, preeclampsia, eclampsia, diabetes mellitus, rhesus iso-immunization, infection in pregnancy, premature rupture of membranes (KPD), ruptura uteri, acute maternal hypotension [2].

According to WHO and The Ameican College Of Obstetricians and Gynecologists, fetal death is a fetus that dies in uterus with a body weight of 500 grams or more or intrauterine fetal death at 20 weeks or more of pregnancy. Fetal death is the end result of impaired fetal growth, fetal distress, or infection.

In uterus Fetal Death can be caused by several factors, namely maternal factors, fetal factors, and placental factors. Maternal factors include age, post term pregnancy (> 42 weeks) and diseases suffered by the mother such as anemia, eclampsia, diabetes mellitus, premature rupture of membranes (KPD) One of the factors that will be discussed is Anemia and Placenta Previa [3].

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According to WHO in 2014 the IMR in the world was 34 per 1,000 live births, IMR in developing countries was 37 per 1,000 live births and IMR in developed countries was 5 per 1,000 live births. The IMR in East Asia was 11 per 1,000 live births, South Asia 43 per 1,000 live births, Southeast Asia 24 per 1,000 live births and West Asia 21 per 1,000 live births [4].

And as for the number of all fetal deaths in the United States more than two-thirds occur before 32 weeks of pregnancy (22%) occur between 36 and 40 weeks of pregnancy, and about (10%) occur beyond 41 weeks of pregnancy. The antepartum fetal death rate in the monitored population is approximately 8 in 1,000 and constitutes (86%) of fetal deaths. And there is also the amount of anemia which is estimated that 35-75% of pregnant women in developing countries and (18%) of pregnant women in developed countries are anemic.

However, many of them already suffer from anemia at the time of conception with an estimated prevalence of (43%) in pregnant women in developing countries and (12%) in more developed countries. One of the causes of such anemia is placenta previa and the prevalence of placenta previa in developed countries ranges from (0.26-2.00%) of all pregnancies.

ASEAN has the highest perinatal mortality rate, which means that the ability to provide health services still requires comprehensive and quality improvement. With an estimated 5,000,000 births in Indonesia each year, it can be explained that infant deaths occur every 25-26 minutes.

And MMR in ASEAN in 2014 Philippines 170 per 100,000 live births, Vietnam 160 per 100,000 live births, Thailand 44 per 100,000 live births, Brunei 60 per 100,000 live births, and Malaysia 39 per 100,000 live births.The incidence of IUFD in Indonesia is still high when compared to countries in Southeast Asia such as Singapore (26.3%), Thailand (21.1%), and Malaysia (10.5%) and Indonesia (25.2%).The incidence of anemia varies, in Indonesia about 70% of 100,000 live births.

Based on the Indonesian Demographic Health Survey in 2012 the infant mortality rate reached 32/1000 live births [5].

The Millennium Development Goals (MDG's) target for 2015 is to reduce infant mortality to 23/100,000 live births. And the number of mothers who experience anemia is (26.2%) consisting of (50.9%) men and (49.1%) women.One of the causes of anemia is bleeding, one of which is due to placenta previa, in Indonesia in 2010 from a total of 4,409 cases of placenta previa found 36 mothers died [6].

Based on data from the South Sulawesi provincial health office, the number of maternal deaths in 2015 reached 149 people out of a total of 147,392 mothers (0.10%). And in 2016 reached 156 people out of a total of 3,200 mothers (4.87%).There were also the number of neonatal deaths in 2015 1,049 out of a total of 147,392 births (0.71%). And in 2016 it reached 874 out of a total of 3,200 births (27.3%).The prevalence of anemia in pregnant women in Makassar in 2015 (98.4%) [7].

Based on Medical Record Data at RSKDIA Pertiwi Makassar, the number of infant deaths in 2016 was 59 babies out of 6276 births per year. And mothers who experienced domestic violence in 2015 with a total of 2,039 pregnant women there were 55 people (2.69%) and in 2016 with a total of 3,964 pregnant women there were 24 people (1.05%). (Medical Records, 2016). Based on the description above, the researcher is interested in conducting research on the relationship between Anemia and Placenta Previa with Fetal Death in the Uterus at RSKDIA Pertiwi Makassar City in 2022.

2. METHOD

The type of research used is a case control approach where this research is to obtain information about the relationship between anemia and placenta previa with intrauterine fetal death. This study was located at RSKDIA Pertiwi Makassar which was conducted from January to April 2022. The population in this study were all mothers who came to do pregnancy checks at RSKDIA Pertiwi Makassar City in 2022 totaling 3,964 pregnant women. The sample in this study was divided into two groups, namely the case group: all mothers diagnosed with domestic violence amounted to 24 mothers, and the control group: some mothers who were not diagnosed with domestic violence, namely 1: 1, so the total sample size was 48 mothers, using probability sampling technique, namely a sample determination technique by selecting a sample among the population that has the same opportunity to be selected as a sample.

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Data collection methods using secondary data obtained from medical records at RSKDIA Pertiwi Makassar. Furthermore, data processing was carried out electronically using a computer with the SPSS program which was used to determine the frequency of each variable studied, and to assess whether there was a relationship between the Independent and Dependent variables. Then the data were analyzed by univariate analysis to obtain an overview of the research problem by describing each variable used in this study, namely looking at the frequency picture and by bivariate analysis carried out on each dependent and independent variable using the chi-square statistical test using the level of significance α = 0.05, but if the chi-square statistical test requirements are not met, fisher's test can be used as an alternative to the 2x2 contingency table test.

3. RESULTS AND DISCUSSION
Univariate Analysis
Object analysis in this study, namely factors associated with the incidence of domestic violence can be seen in the following table:

Table 1. Frequency Distribution of the Incidence of Fetal Death in the Uterus At RSKDIA Pertiwi Makassar City Year 2022

Fetal Death in the Uterus	Frequency	Percentage (%)
Case	24	50,0
Control	24	50,0
Total	**48**	**100,0**

Table 1 shows that the number of mothers who experienced fetal death in the uterus was 24 people (50.0%) and those who did not experience fetal death in the uterus were 24 people (50.0%).

Table 2. Frequency Distribution of Incidence of Fetal Death in the Uterus Based on Anemia at RSKDIA Pertiwi Makassar City Year 2022

Anemia	Frequency	Percentage (%)
Anemia	21	44,0%
No Anemia	27	56,0%
Total	48	100%

Based on table 2 shows that the number of mothers who experienced anemia was 18 people (44.0%) and those who did not experience anemia were 23 people (56.0%).

Table 3. Frequency Distribution of the Incidence of Fetal Death in the Uterus Based on Placenta Previa at RSKDIA Pertiwi Makassar City in 2022

Placenta Previa	Frequency	Percentage (%)
Placenta Previa	17	36,0%
No Placenta Previa	31	64,0%
Total	48	100%

Based on table 3 shows that mothers who experienced placenta previa were 17 people (36.0%) and those who did not experience Placenta Previa were 48 people (64.0%).

Bivariate Analysis
Bivariate analysis was conducted to determine the relationship between independent variables and dependent variables. The statistical test used is the chi-square test with a level of meaning α = 0.05. The relationship between the independent variable and the dependent variable is described as follows:

Table 4. Relationship between Anemia and the Incidence of Fetal Death in the Uterus at RSKDIA Pertiwi Makassar City Year 2022

| Anemia | Fetal Death in the Uterus | | | | Total | | P-value |
| | Case | | Control | | | | |
	n	%	n	%	N	%	
Anemia	7	50,0	14	66,7	21	100,0	0,042
No Anemia	17	17,0	10	37,0	27	100,0	
Total	24	50,0	24	50,0	48	100,0	

Table 4 shows that the number of mothers with anemia was 21 people, consisting of 7 people (50.0%) who experienced fetal death in the uterus and 14 people (66.7%) who did not experience fetal death in the uterus. While mothers who did not experience anemia were 27 people, consisting of 17 people (17.0%) who experienced fetal death in the uterus and 10 people (37.0%) who did not experience fetal death in the uterus. Based on the results of chi-square analysis, the p value = 0.042 was obtained. Greater than α = 0.05 this means Ho accepted Ha rejected. Thus there is no relationship between the incidence of Fetal Death in the Uterus with Anemia.

Table 5. Relationship between Placenta Previa and the Incidence of Fetal Death in the Uterus at RSKDIA Pertiwi Makassar City Year 2022

| Placenta Previa | Fetal Death in the Uterus | | | | Total | | P-value |
| | Case | | Control | | | | |
	N	%	n	%	N	%	
Placenta Previa	7	7,0	10	58,8	17	100,0	0,365
No Placenta Previa	17	12,1	14	45,1	31	100,0	
Total	24	50,0	24	50,0	48	100,0	

Table 5 shows that the number of mothers with Placenta Previa was 17, consisting of 7 people (7.0%) who experienced fetal death in the uterus and 10 people (58.8%) who did not experience fetal death in the uterus. While those who did not experience Placenta Previa were 31 people, consisting of 17 people (12.1%) who experienced in uterus fetal death and 24 people (45.1%) who did not experience in uterus fetal death. Based on the results of chi-square analysis obtained p value = 0.365 Greater than α = 0.05 this means Ho accepted Ha rejected. Thus there is no relationship between the incidence of intrauterine fetal death and anemia.

The results of data processing and presentation that have been carried out will be discussed in accordance with the variables studied, namely as follows:

1. **Relationship between Anemia and Fetal Death in the Uterus**

Anemia is a condition where hemoglobin levels are lower than the normal limit for the group of people concerned [8]. Anemia is one of the health problems that plays a role and causes high maternal and fetal mortality [9]. Why anemia causes intrauterine fetal death is because anemia causes the amount of oxygen bound and carried by hemoglobin to decrease, so it cannot meet tissue needs. Some organs and processes require large amounts of oxygen. If the amount of oxygen supplied is reduced, the performance of the organ concerned will decrease, while the smooth running of certain processes will be disrupted. And cause the development and function of fetal tissue does not develop according to gestational age and fatally can cause intrauterine fetal death.

Fetal death in the uterus is called Intra Uterine Fetal Death (IUFD), which is death that occurs when the gestational age is more than 20 weeks or in the second trimester and or weighing 500 grams [10]. If it occurs in the first trimester, it is called a miscarriage or abortion [11]. The results showed that the number of mothers with Anemia.

2. Relationship between Placenta Previa and Intrauterine fetal death

Placenta previa is a placenta that is in front of the birth canal, whose abnormal implantation is so low that it covers all or part of the osium internum. Symptoms of placenta previa are bleeding for no reason and without pain.

Bleeding can occur while the patient is sleeping or working normally the first bleeding is usually not much, so it will not be fatal but subsequent bleeding is almost always more than before, especially if an internal examination has previously been performed [12].

With the occurrence of heavy bleeding, the mother will experience anemia which causes fetal death in the uterus because anemia causes the amount of oxygen bound and carried by hemoglobin to decrease, so it cannot meet tissue needs. Some organs and processes require large amounts of oxygen. If the amount of oxygen supplied is reduced, the performance of the organ concerned will decrease, while the smooth running of certain processes will be disrupted. Fetal death in the uterus is called Intra Uterine Fetal Death (IUFD), which is death that occurs when the gestational age is more than 20 weeks or in the second trimester and or whose weight is 500 grams. If it occurs in the first trimester, it is called a miscarriage or abortion [11].

4. CONCLUSION

Based on the results of the study, it can be concluded that there is no relationship between Anemia and Intrauterine Fetal Death and there is no relationship between Placenta Previa and Intrauterine Fetal Death. It is expected for the next researcher to examine more factors that cause intauterine fetal death so that the data obtained is more accurate.

Acknowledgement

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