

## CORRELATION OF ANEMIAN AND PREMATUR LABOUR IN ISLAMIC HOSPITAL PKU MUHAMMADIYAH SINGKIL

Ika Esti Anggraeni<sup>1)</sup>, Ike Putri Setyatama<sup>2)</sup>, Masturoh<sup>3)</sup>

Email: [ika.esti@gmail.com](mailto:ika.esti@gmail.com)<sup>1)</sup>, [ike.putri.nugraha@gmail.com](mailto:ike.putri.nugraha@gmail.com)<sup>2)</sup>, [masturoh88@gmail.com](mailto:masturoh88@gmail.com)<sup>3)</sup>

1),2),3)Midwifery Diploma Programme of STIKES Bhamada Slawi

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### Abstract

*Anemia increases the risk of maternal death during pregnancy, due to the low blood supply resulting in disruption of body cell function and resulting in premature labor. Based on Riskesdas in 2018, about 48.9% of pregnant women had anemia. Preterm labor was the leading cause of neonatal morbidity and mortality in the world. In 2018, Tegal Regency had 10% maternal death caused by anemia. There was a 5.4% mother with anemia and 5.2% premature babies, in PKU Muhammadiyah Singkil. This study aimed to determine the correlation of anemia with premature labor at PKU Muhammadiyah Singkil. This study was a quantitative study used analytic method with a retrospective research design. This study was conducted in Islamic Hospital PKU Muhammadiyah Singkil using medical records of 70 pregnant women. The data were taken from August-October 2018. Collected data analyzed using bivariate analysis. The study finding shows that 54% of respondents suffered anemia, and 55.7% had preterm labor. The bivariate analysis shows a p-value = 0.0001, which means there is a significant correlation between anemia and preterm labor. There is 0.73 times more risk of incidence in preterm labor in pregnant women with anemia.*

**Keywords:** Anemia, Premature Labor

### Correspondence:

Ika Esti Anggraeni, Midwifery Diploma Programme of STIKES Bhamada Slawi Tegal Regency, 085229363505, [ika.esti@gmail.com](mailto:ika.esti@gmail.com)

### 1. Introduction

Anemia is a nutritional problem that was very influential for millions of people in the world. Anemic conditions increased the risk of maternal death during pregnancy, childbirth, and postpartum due to the low oxygen supply carried by the hemoglobin in red blood cells, resulting in disruption of each body cell's function. Anemia could cause premature labor, IUFD (Intra-Uterine Fetal Death), miscarriage, stillbirth, disability, lack of iron

reserves, shock, postpartum hemorrhage due to uterine atony, prolonged labor due to uterine inertia, both intrapartum and postpartum infections.<sup>[1]</sup> Based on the Basic Health Research or Riskesdas, in 2018, 48.9% of pregnant women had anemia, an increase of 11.5% compared to 2013, which was 37.1%<sup>[2]</sup>.

According to Agarwal (2016), the leading cause of anemia was nutrition from iron deficiency and infection.<sup>[3]</sup> Iron is essential for the synthesis of hemoglobin, and when the body was lacking iron, it could lead to anemia.<sup>[4]</sup> Many pregnant women consume food or

drinks that inhibit iron absorption (phytates), such as tea, so that the body cannot utilize iron. An iron deficiency would be worse by nutritional status, mainly associated with deficiency of folic acid, vitamin A or B12. Infectious diseases, malaria, and intestinal worms are another cause of anemia, especially in endemic areas.<sup>[5]</sup>

Ulfa (2013) previous study stated that there was a significant relationship between the incidence of anemia and preterm labor, in the two groups she observed, the group with lower hemoglobin level ( $10.62 \pm 1.42$  gr/dl) mostly found with preterm labor compared with the group with average hemoglobin level ( $11.51 \pm 1.06$  gr/dl) with a statistical value of  $p = 0.007$ <sup>[6]</sup>.

Anemia in pregnancy harms both the mother and the fetus because it could affect fetal development. It could also lead to premature birth, and infectious diseases can even cause death in the mother and fetus.<sup>[7]</sup> Anemia causes low birth weight (LBW), susceptible to infection, miscarriage, and premature labor.<sup>[5]</sup>

Anemia in pregnancy also contributed to maternal mortality. In 2018, there were 10 cases Tegal Regency caused by various factors; 30% caused by hypertension, 10% caused by prolonged birth in the second stage, 10% by Gemelli, and 10% by anemia. Anemia occurred because, during pregnancy, the hemoglobin level decreases and leads to hemorrhage during labor, which could cause maternal death<sup>[8]</sup>.

The outcome of premature labor was low birth weight, which can lead to perinatal death even though low birth weight not only cause by preterm labor but also stunted fetal growth.<sup>[9]</sup>

Based on Riskesdas (2018), in Indonesia, 6.2% of babies were born weighing less than 2500 grams. Data from the Health Office in Tegal Regency, Infant Mortality Rate (IMR) in 2018 were 51.7%. Premature labor was leading to neonatal death about 60-80% cases worldwide. There was a 19% incidence of premature in Indonesia, which lead to perinatal death.<sup>[7]</sup> Larumpa (2017), in her study, also found that there was a significant correlation between anemia with the incidence of premature labor.<sup>[10]</sup> Based on a preliminary study in Islamic Hospital PKU Muhammadiyah Singkil, 5.4% of mothers with anemia and 5.2% of premature babies.<sup>[11]</sup> The high incidence of anemia in pregnant women and the incidence of premature babies at Islamic Hospital PKU Muhammadiyah Singkil made researchers interested in conducting a study on the correlation of anemia with premature birth in Islamic Hospital PKU Muhammadiyah Singkil.

## 2. Method

This research used a quantitative analytical method with a retrospective research design to see the correlation between anemia in pregnant women with premature labor. This study was conducted from August to October 2018 in Islamic Hospital PKU Muhammadiyah Singkil to 70 people. Data collected from medical records to get hemoglobin level data and partograph sheets to get gestational age data. Collected data analyzed using Spearman's Rho.

## 3. Results and Discussion

**Table 1.** The incident of Anemia 2018

No	Incident	Total	Percentage
1	Pregnant women had anemia	38	54%
2	Pregnant women did not anemia	32	46%
	Total	70	100%

The table 1 shows that 38 pregnant women (54%) had anemia, and 32 (46%) did not have anemia..

**Table 2.** The incident of Premature labor

No	Incident	Total	Percentage
1	Premature Labor	39	55.7%
2	Aterm Labor	31	44.3%
Total		70	100%

Table 2 shows that 39 pregnant women (55.70%) gave birth preterm, and 31 people (44.30%) were at term. This finding showed that there was a high incidence of preterm labor in Islamic Hospital PKU Muhammadiyah Singkil

**Table 1.** Bivariate analysis

Variable	r	p-value
Correlation of anemia with premature labor	0,73	0,0001

Table 1 shows a p-value= 0.0001, which means there is a significant correlation between anemia with premature labor. While the value of rho obtained 0.73, there is a 0.73 times more risk of premature delivery on anemic mothers. Preterm labor occurs in pregnancies of less than 37 weeks (between 20-37 weeks), according to Winkjosastro (2014), preterm labor caused by maternal factors, fetal and placental factors, as well as other factors of the maternal health conditions.<sup>[9],[12]</sup>

This finding is different from Wahyuni (2017) previous study, which stated that age was the most factor that influences preterm labor with a p-value of 0.017, then parity with a p-value of 0.049<sup>[13]</sup>. Some studies also showed that other conditions cause preterm labor such as urinary tract infections, maternal diseases like

hypertension, asthma, heart disease, drug addiction, cholestasis, and anemia). Some conditions cause excessive uterine distension (multiple pregnancies, hydramnios, diabetes, Rh isoimmunization, antepartum warning, general infection in the mother, surgery during pregnancy, and pregnancy with IUD).

This study finding is consistent with Cahyani (2016) and Sudiati (2015), which showed that there was a significant relationship between anemia with the incidence of preterm labor (p-value= 0.008).<sup>[15],[16]</sup> Anemia is a condition of decreased hemoglobin levels, where the carrying capacity of oxygen for the needs of vital organs in the mother and fetus is reduced. A disruption in the distribution of oxygen and nutrients directly affects the functioning of the placenta. The decreased placental function can cause fetal growth and development disorders, premature, miscarriage, prolonged labor, maternal and fetal death, and low birth weigh. Lack of hemoglobin also disrupts the metabolic body. During pregnancy, an indication of anemia occurs if the hemoglobin concentration is less than 10.50<sup>[17],[18],[19]</sup>.

Anemia is one of the causes of preterm labor. So to prevent this, pregnant women need to monitor their hemoglobin levels continuously.

#### 4. Conclusion

The finding of this study shows that many pregnant women still suffer anemia and experiencing preterm labor. Statistically show a p-value 0.0001, which means there is a correlation between anemia and preterm labor and had 0.73 times higher risk to get premature labor.

#### 5. Acknowledgment

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## 6. References.

- [1] Manuaba. *Ilmu Kebidanan, Penyakit Kandungan, dan KB*. Jakarta: EGC. 2010.
- [2] Riskesdas. *Infodatin*. Jakarta. 2013.
- [3] Agarwal, P. Redefining the organizational citizenship behavior. *international journal of Organiztional Analysis*, 24 (5), 956-984. 2016.
- [4] Almatsier. *Prinsip Dasar Ilmu Gizi*. Jakarta: Gramedia
- [5] Kemenkes RI. *Profil Kesehatan Indonesia tahun 2016*. Jakarta. 2009.
- [6] Aulia Ulfa. Hubungan Antara Anemia Pada Ibu Hamil dengan Kejadian Persalinan Preterm di RSUP M Djamil Padang Tahun 2013. <http://Jurnal.fk.unand.ac.id> diakses tanggal 03 September 2019 Pukul 13.00 WIB.
- [7] Riskesdas. *Hasil Utama Riskesdas*. Diakses. 2018. di [www.depkes.go.id](http://www.depkes.go.id) pada tanggal 03 September 2019 Pukul 13.00 WIB
- [8] Dinkes Kab Tegal. *Profil Kesehatan Kabupaten Tegal Tahun 2018*. 2018. [www.data.jatengprov.go.id](http://www.data.jatengprov.go.id) diakses tanggal 03 September 2019 Pukul 13.00 WIB
- [9] Nugroho Taufan. *Patologi Kebidanan*. Yogyakarta: Nuha Medika. 2012.
- [10] Larumpa. Hubungan Anemia Pada Ibu Hamil Dengan Kejadian Persalinan Premature di RSUP prof.Rd.R.D. *Kandou Manado Jurnal e-Clinik (eCI)* vol 5 Nomor I Tahun 2017.
- [11] Data RSI PKU Muhammadiyah Singkil Tahun 2018
- [12] Wiknjosastro. *Ilmu Kebidanan*. Jakarta: YBPSP. 2014.
- [13] Wahyuni. Faktor-faktor yang mempengaruhi persalinan preterm. Aisiyah:*Jurnal Ilmu Kesehatan* 2 (1)2017,61-68. 2017.
- [14] Rukiyah & Yulianti. *Asuhan Kebidanan (patologi Kebidanan)*. Jakarta: Trans Info Media. 2010.
- [15] Cahyani. Hubungan Antara Anemia Pada Ibu Bersalin dengan Kejadian Prematur di RSU PKU Muhammadiyah Bantul. 2016. Diakses tanggal 18 September 2019 pukul 15.00 WIB
- [16] Varney, Helen. *Buku Ajar Asuhan Kebidanan Edisi 4*. Jakarta : EGC. 2009.
- [17] Tarwoto. *Buku Saku Anemia Pada Ibu Hamil, Konsep danPenatalaksanaan*. Jakarta:Trans Info Media. 2010.
- [18] Karasahin et al. Antenatal steroids in Preterm Labour forThe Prevention of Neonatal Deaths Due to Complications of Preterm Birth, *International Journal of Epidemiology*. Vol. 39. 2012.
- [19] Sudiart. Anemia sebagai Faktor Resiko Persalinan Premature di RSUD Tugurejo Semarang. 2015. Diakses tanggal 18 September 2019 pukul 15.30 WIB