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**Relationship Between Placenta Previa And The Incidence Of Premature Labor At The Harapan Sehat Tentram Mother And Child Hospital**

**Nurhidayah<sup>1\*</sup>, Suhartini<sup>2</sup>, Lailaturohmah<sup>3</sup>**

<sup>1,2,3</sup>STIKES Ganesha Husada Kediri

Email: nurhidayah @stikesganesshusada.ac.id<sup>1</sup> , suhartini@stikesganesshusada.ac.id<sup>2</sup> , lailaturohmah @stikesganesshusada.ac.id<sup>3</sup>

**Abstract**

Placenta previa is a placenta that is abnormally located, namely in a segment under the uterus, so can cover all over opening road born . Placenta previa in premature pregnancy is more problematic because labor is forced due to heavy bleeding. This study aimed to determine the relationship between placenta previa and the incidence of premature labor. This research is correlational analytical research using a cross-sectional approach, the population of this study was 321 people, and the sample size was 38 people using a simple random sampling technique. The statistical test used in this research is the Chi-Square test with a significance p value of <0.05. The study results showed that the majority of mothers experiencing placenta previa were 23 respondents (60.5%), and the majority of mothers experiencing premature births were 21 respondents (55.3%). The results of the further analysis showed a significant relationship between placenta previa and premature labor in mothers giving birth at Harapan Sehat Trenggalek Mother and Child Hospital (p-value = 0.000;  $\alpha < 0.05$ ).

Keywords: Placenta Previa, Premature Labor, Mother Giving Labor

**INTRODUCTION**

Premature labor is labor that occurs at 20-37 weeks of gestation, calculated from the first day of the last menstruation. The World Health Organization (WHO) states that premature babies are babies born at 37 weeks of gestation or less. Neonatal mortality and morbidity in premature babies is still high (Prawiroharjo S, 2012)

Premature labor is caused by pregnancy factors (antepartum haemorrhage, early pregnancy, grandemultipara and short interval, premature rupture of membranes, hydramniotic pregnancy, hormonal balance disorders, incompetent cervix and uterine anatomical abnormalities, idiopathic with increased receptors (oxytocin) preeclampsia/eclampsia or individual factors (low socioeconomic status, hard work during late pregnancy, malnutrition), systemic diseases (lung, heart, liver, diabetes mellitus, hypertension), pregnancy infections (chorioamnionitis, cervicitis) placental infections (Manuaba, 2008)

In 2016, the infant mortality rate (IMR) in Indonesia was recorded at 25.5/1000 live births, of which 38.57% was caused by premature parturition (Winkjasatro, 2010). Data recorded that the infant mortality rate for East Java province in 2015 was 25.3/1000 live births (East Java Provincial Health Office, 2015). Based on data from the Trenggalek Health Service, in 2016 the IMR was at 7.95/1000 live births. Data recorded on the infant mortality rate (IMR) at the Harapan Sehat Tentram Trenggalek Mother and Child Hospital in 2017 with 3 causes being premature births. At the Harapan Sehat Tentram Trenggalek Mother and Child Hospital, the incidence of premature labor showed a significant increase. Where in 2014 there were 32 cases, in 2015 there were 46 cases, and in 2016 there were 55 cases. Based on the results of pre-survey data, of the 10 babies born prematurely, 6 of them were caused by mothers giving birth with placenta previa. This figure is a sensitive indicator for assessing the availability and quality of adequate health services for mothers and children as a whole.

Placenta previa is a placenta that is abnormally located in the lower segment of the uterus so that it can cover part or all of the opening of the birth canal. Under normal circumstances, the placenta is located at the top of the uterus, usually in front or behind the uterine wall, slightly above the uterine fundus. The placenta is attached to the uterine wall and to the baby's umbilical cord, which forms a connection between mother and baby (Davood, 2008). Placenta previa in premature pregnancies is more problematic because labor causes heavy bleeding, the birth process or prematurity itself. In 2013, Indonesia had an incidence of premature parturition of around 10.2%, where the birth was caused by placenta previa. With good management, perinatal mortality is 50/1000 live births (Whardana, 2007). It is hoped that nurses as health workers can provide good services in accordance with standards so that they can reduce the incidence of placenta previa and obstetric complications.

Based on the phenomenon of Infant Mortality Rate (IMR) above, placenta previa can increase the incidence of premature parturition. This is a matter of urgency. According to researchers, research has never been conducted at the Harapan Sehat Tenram Trenggalek Mother and Child Hospital, so it is possible to research because it meets the aspects of originality and urgency. Based on considerations of methodology, time, energy, costs and suitability of the researcher's competence with the team, this theme can be researched. If research is carried out, it is possible that it will bring benefits to both respondents, society and agencies. Therefore, researchers are interested in uncovering the relationship between placenta previa and the incidence of premature labor at the Harapan Sehat Tenram Trenggalek Mother and Child Hospital. Pregnant women who experience placenta previa will have the opportunity to experience premature labor due to hemorrhage in the placenta which is activated by prorombinase which will convert prothrombin into thrombin. This can stimulate myometrial contractions and induce preterm labor.

## METHOD

This research uses a correlational analytical research design with a cross-sectional approach where the independent variable and dependent variable are observed only once at the same time and then analyzed to see whether there is a relationship between the two variables. In this study, 2 variables were used, namely the independent variable in the form of placenta pravia and the dependent variable in the form of premature labor.

## RESULTS

**Table 1 The characteristics of respondents in this study based on age, education, employment and pregnancy status**

Category	Type	Frequency	Percentage
Age	<20 years	7	18.4 %
	20-35 Ahun	28	73.7 %
	>35 years	3	7.9 %
<b>Total</b>		<b>38</b>	<b>100%</b>
Education	Elementary School	4	10.5 %
	Junior High School	10	26.4 %
	Senior High School	17	44.7 %
	Pt	7	18.4 %
	<b>Total</b>		<b>38</b>
Work	Civil servants	3	7.9 %
	Private	7	18.4 %
	Farmer	8	21.1 %
	Doesn't work	20	52.6 %
<b>Total</b>		<b>38</b>	<b>100%</b>
Pregnancy status	Primipara	12	31.6 %
	Multiparous	7	18.4 %
	Grandmultipara	19	50 %

**Total**

**38**

**100%**

Based on table 1 in terms of the age of the mother giving birth, information can be obtained that the majority of respondents, 28 respondents (73.7%) were aged < 20 and above 35 years which causes a high risk in pregnancy. The increase in the incidence of preterm labor in teenage mothers is as follows. Blood circulation to the cervix and uterus in teenagers is not yet perfect, which causes infections to increase and premature labor to also increase. Some pregnant teenagers also play a role because teenagers still need nutrients that will be shared with the fetus compared to adult mothers who no longer need nutrients to grow. From the education level of the birthing mother, information can be obtained that almost half of the respondents, 17 respondents (44.7%) had a high school education. This shows that pregnant women's knowledge is low regarding health problems for pregnant women. If there are training and service programs in the community, they can only be accepted in simple language, shown with concrete examples and repeatedly and it is better not collectively (individually). Information about the work of mothers giving birth can be obtained that the majority of respondents, 20 respondents (52.6%) do not work. Which can influence a low level of social interaction and a low level of sensitivity to health problems. Regarding the pregnancy status of the mother giving birth, information can be obtained that half of the respondents, 19 respondents (50%) were Grandemultipara. This shows that causing too frequent pregnancies increases the risk of high pregnancy.

**Table 2 Data on the Incidence of Placenta Previa in Mothers Giving Birth at the Hope Healthy Mother and Child Hospital in Trenggalek**

Code	Occurrence of Placenta Previa	Frequency	Percentage
1	Placenta Previa	23	60.5 %
2	No Placenta Previa	15	39.5 %
<b>Amount</b>		<b>38</b>	<b>100%</b>

**Table 3 Data on the Incidence of Premature Labor in Mothers Giving Birth at the Harapan Sehat Serene Mother and Child Hospital in Trenggalek**

Code	Premature Labor	Frequency	Percentage
1	Premature Labor	21	55.3 %
2	No Premature Labor	17	44.7 %
<b>Amount</b>		<b>38</b>	<b>100%</b>

Based on table 3, information was obtained that the majority of respondents, 21 respondents (55.3%) experienced premature labor

**Analysis of the Relationship between Placenta Previa and Premature Parturition**

Based on the research results, it was found that the analysis of the relationship between placenta previa and the incidence of premature parturition at the Hope Healthy Mother and Child Hospital in Trenggalek in 2021 is as follows:

**Table 4 Analysis of the Relationship Between Placenta Previa and the Incidence of Premature Labor at the Harapan Sehat Sehat Trenggalek Mother and Child Hospital**

Incident Placenta Previa	Premature Parturition		No Premature Parturition		Amount		p-value
	N	%	N	%	N	%	
Placenta Previa	18	47.4	5	13.1	23	60.5	<b>0.000</b>
No Placenta Previa	3	7.9	12	31.6	15	39.5	
Amount	21	55.3	17	44.7	38	100	

Hasil analisis berdasarkan tabel 4 menunjukkan bahwa terdapat hubungan yang signifikan antara placentia

previa dengan kelahiran premature pada ibu bersalin di Harapan Sehat Sehat Trenggalek Mother and Child Hospital ( $p$ -value = 0.000;  $\alpha < 0.05$ ).

## **DISCUSSION**

### **Placenta Previa**

The research results showed that the majority of respondents experienced placenta previa, 60.5%. This is in line with Sari (2019), showing that the majority experienced placenta previa at 53.6%. Placenta previa is a placenta that is abnormally located, namely in the lower segment of the uterus so that it can cover part or all of the opening of the birth canal. Placenta previa is the implantation of the placenta in the lower segment of the uterus so that it covers the cervical canal and interferes with the birth process by causing bleeding. Under normal circumstances, the placenta is located at the top of the uterus, usually in front or behind the uterine wall, and slightly upwards towards the uterine fundus. Complications of placenta previa are fetal abnormalities, prematurity, high morbidity and mortality, intrauterine asphyxia and even death. This is in line with research results which state that antepartum haemorrhage due to abnormalities in the location of placental implantation causes maternal morbidity, perinatal morbidity and perinatal mortality (Arisani et al., 2017).

### **Premature Parturition**

The research results showed that the majority of respondents experienced premature birth, 55.3%. This is in line with research by Siska et al., (2021), showing that the study prevalence of premature births in mothers is 50%. Premature birth is delivery before 37 weeks of gestation or a baby with a birth weight of 500-2499 grams. There are four mechanisms that might cause preterm birth, namely the first is the existence of the hypothalamic-pituitary-adrenal axis of the fetus and mother. This mechanism occurs due to stress fetomaternal which stimulates the release of corticotropin releasing hormone (CRH) which results in changes in the regulation of the hormones estrogen and progesterone. Second is systemic inflammation or inflammation of the decidua and chorioamnion. This mechanism supports the occurrence of infection as a cause of preterm birth. The third is decidual bleeding which causes placental abruption and the fourth is pathological uterine distension such as multiple pregnancies, polyhydramnios and uterine abnormalities. The impact of premature birth is the possibility that the baby being born will experience disruption of several bodily organ functions and thus require intensive care to survive. The survival capacity of premature babies is not only determined by body weight but also by gestational age. Apart from the issue of survival, another important issue is the quality of life achieved by premature and low birth weight babies (Yuanita, 2021).

### **Placenta Previa and Premature Labor**

The results of the study showed that there was a significant relationship between the incidence of placenta previa and premature birth ( $p$ -value = 0.000;  $\alpha < 0.005$ ). This is in line with Sari (2019), showing that there is a significant relationship between the incidence of placenta previa and premature birth ( $p$ -value = 0.004;  $\alpha < 0.005$ ). According to the research results, it can be concluded that mothers who experience placenta previa have a 1.9 times chance of experiencing preterm labor compared to mothers who do not experience placenta previa. Bleeding in the placenta and decidua causes activation of clotting factor Xa (prothrombinase). Prothrombinase will convert prothrombin into thrombin and in several studies thrombin is able to stimulate myometrial contractions and induce premature labor (Arisani et al., 2017).

## **CONCLUSION**

Pregnant women who experience placenta previa will have the opportunity to experience premature labor due to hemorrhage in the placenta which is activated by prorombinase which will convert prothrombin into thrombin. This can stimulate myometrial contractions and induce preterm labor.

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