

RISK FACTORS ANALYSIS OF PREECLAMPSIA IN MATERNITY MOTHERS IN MUHAMMADIYAH LAMONGAN HOSPITAL

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ABSTRACT

Preeclampsia is a complication in pregnancy and childbirth that can increase morbidity and mortality of the mother and fetus. Many factors affect the occurrence of preeclampsia. The aim of this research is to know the correlation between risk factor of preeclampsia and the incidence of preeclampsia in Muhammadiyah Lamongan hospital. The research used descriptive analytic method with cross sectional approach. The sample size was 138 maternity mothers, divided by 69 delivery mothers with preeclampsia and 69 normal maternity mothers in Muhammadiyah Lamongan hospital from January 2017 to December 2017. Sampling with simple random sampling. Data collection using interviews and patient medical record data. Data were analyzed univariat, bivariate with Chi-Square test, and multivariate analysis with logistic regression analysis. The result of chi-square test showed that there was significant correlation between age (p value 0,017), parity (p value 0.000), history of hypertension (p value 0,001) and hyperplacentosis (p value 0,002) with preeclampsia occurrence. The result of statistic regression test was obtained OR for 0,115 for OR, 5,825 for parity, OR 2,717 for hypertension, and OR for 6,603 for hyperplacentosis. It can be concluded that age, parity, history of hypertension and hyperplacentosis are risk factors for the incidence of preeclampsia in Muhamamdiyah Lamongan hospital. It is expected that this research can contribute to the improvement of health efforts and provide scientific studies for health workers to provide the best service for the community, especially in reducing preeclampsia as the cause of maternal mortality.

Keywords: Risk Factors, Preeclampsia, pregnancy

INTRODUCTION

Maternal death is a complex issue that not only affects women, but also affects families and even the surrounding community. Maternal Mortality Rate (MMR) is one indicator to see the degree of women's health. There are two categories of maternal deaths that are caused by direct causes of obstetrics: deaths caused directly by pregnancy and childbirth, and deaths caused by indirect causes ie deaths occurring in pregnant women caused by illness and not by pregnancy or delivery (Ministry of Health of the Republic of Indonesia , 2013).

Based on the Indonesian Demographic Health Survey (IDHS) in 2012, maternal mortality (associated with pregnancy, childbirth and childbirth) is approximately 359 / 100,000 live births, this figure is increased compared to 2007 which is about 228 / 100,000 live births. The main triage of maternal mortality is bleeding, hypertension in pregnancy (HDK) and infection. Indonesia Health Profile of 2014, almost 30% of maternal deaths in Indonesia in 2010 caused by HDK. Hypertensive disease in pregnancy is a vascular disorder that occurs before pregnancy or arises in pregnancy or in the puerperium (Ministry of Health RI, 2014).

Preeclampsia / Eclampsia is a major cause of maternal and infant morbidity and mortality in the world especially developing countries. In developing countries the frequency is reported to be between 0.3% and 0.7%, while in developed countries the eclampsia rate is smaller, ie 0.05% to 0.1%. In Indonesia severe preeclampsia and eclampsia are the causes of maternal deaths ranging from 1.5% to 25%, while infant mortality is between 45% to 50%. Eclampsia causes 50,000 deaths / year worldwide, 10% of maternal mortality (Caroline, 2008).

Risk factors that can increase the incidence of preeclampsia include mollahidatidosa, nulipara, age less than 20 years or more than 35 years, fetus more than one, multiparous, chronic hypertension, diabetes mellitus or kidney disease. Preeclampsia and eclampsia are also affected by parity, genetics and environmental factors (Wiknjosastro, 2014).

Based on the results of Emily's research, et al (2016) it was found that women at risk for preeclampsia were women with higher-ranking antiphospholipid antibodies, followed by women with chronic hypertension, pragestational diabetes, body mass index > 30, and using reproductive technology assisted and other prominent risk factors. While research conducted by Zhang JZ (2015) obtained results that age, gestational distance, regular pregnancy examination, body weight during pregnancy, body mass index, hyperlipidemia, fetal growth disorder, maternal family history closely associated with preeclampsia are independent risk factors for recurrence of preeclampsia.

Efforts that can be done to reduce maternal mortality is to detect as early as possible in pregnant women, maternity, and the period of 42 hours after delivery, especially in women with risk factors.

RESEARCH METHODS

This study used descriptive analytic study with cross sectional approach. The study was conducted at the Muhammadiyah Lamongan hospital from January 2017 to December 2017. The sample size was 138 maternal mothers, consisting of 69 delivery mothers with preeclampsia and 69 normal delivery mothers taken in simple random sampling.

Technique of collecting data with secondary data that is by doing documentation study by utilizing official documents. Muhammadiyah Lamongan hospital in the form of medical records of respondents.

Data processing using univariate analysis, bivariate analysis with Chi-Square test, and Multivariate analysis with Multiple Logistic Regression. Requirement to do multivariate analysis if result of bivariate calculation yield p value <0,05.

RESULTS AND DISCUSSION

Research Result: Frequency Distribution of Risk Factors of Preeclampsia in Maternity Mother in Muhamamdiyah Lamongan Hospital.

Table below shows that maternal age in case group and control group mostly (68.1%) and (86.9%) are between 20-35 years old. Data for maternal parity in case clusters (women with preeclampsia) were almost partially (43.5%) were primiparous pregnancies, while for control group the majority (91.3%) of mothers multiparous pregnancy. Data for maternal hypertension history in both the control group of all (100%) mothers did not have a history of previous hypertension. Data for hyperplasentosis(multiple pregnancies, large infants) in the entire control group (100%) did not develop hyperplasentosis.

Tabel 1. Frequency distribution of Risk Factors of Preeclampsia in Maternity Mothers in Muhamamdiyah Lamongan LamonganYear 2017

Variabel	Case		Control		Total	
	f	%	f	%	f	%
Age						
< 20 Years	3	4,4%	0	0%	3	2,2%
20 – 35 Years	47	68,1%	60	86,9%	107	77,5%
>35 Years	19	27,5%	9	13,1%	28	20,3%
Parity						
Primipara	30	43,5%	2	2,9%	32	23,2%
Multipara	26	37,7%	63	91,3%	89	64,5%
Grandemultipara	13	18,8%	4	5,8%	17	12,3%
Hypertension history						
Yes	10	14,5%	0	0%	10	7,2%
No	59	85,5%	69	100%	128	92,8%
Hyperplacentalosis						
Yes	9	13%	0	0%	9	6,5%
No	60	87%	69	100%	129	93,5%

Table 2. Risk factor analysis of Preeclampsia in Maternity Mother in Muhammadiyah Lamongan HospitalYear 2017

Risk factor	Sig.	Ex.(B) / OR	CI	
			L	U
Age	0.017	0.115	0.036	0.362
Parity	0.000	5.825	2.504	13.552
Hypertension history	0.001	2.717	0.824	8.961
Hyperplacentalosis	0.002	6.603	1.376	31.688

Data from table 2 can be seen that from Chi Square test results obtained p value 0.017 and smaller than 0.05 which means there is a relationship between maternal age with the incidence of preeclampsia. As for the value of Odds Ratio (OR) at age risk factor that is equal to 0.115 which means that mother with

age <20 and> 35 years had a risk of 0.115 times greater for preeclampsia than mothers with mothers over 20 years of age.

The result of statistical test on maternal parity was obtained p value of 0.000 where p is smaller than 0.05 which means there is relationship between parity with preeclampsia occurrence. OR results from maternal parity of 5,825, which means mothers with primiparity parity have a risk of having preeclampsia 5.825 times greater than mothers who are not primipara.

The results of statistical tests on hypertension history obtained p value of 0.001 where p is smaller than 0.05, which means there is a relationship between history of hypertension with the incidence of preeclampsia in maternal mothers. OR results from a maternal hypertetic history of 2.717, which means women with a history of hypertension had a risk of having preeclampsia 2.717 times greater than mothers with no history of hypertension.

The results of statistical tests on hyperplacentalosis obtained p value of 0.002 where p is smaller than 0.05 which means there is a relationship between hyperplacentalosis with the incidence of preeclampsia in maternal mothers. As for OR results from hyperplacentalosis of

6.603, which means that women with hyperplacentosis have a risk of preeclampsia 6.603 times greater than mothers without hyperplacentosis.

DISCUSSION

Age relationship with Preeclampsia

The results showed that there was a relationship between maternal age and the incidence of preeclampsia in maternity in Muhammadiyah Lamongan hospital with p value 0.017 where $p < 0,05$ meaning there is relation between age with incidence of preeclampsia and OR equal to 0,115 meaning maternal mother with age <20 years and > 35 years have risk of preeclampsia 0.115 times bigger than mother age at age productive age of 20-35 years. Occurrence of preeclampsia can occur in various age criteria of the mother. Mothers with age <20 years and > 35 years are considered as one of the risk factors for preeclampsia in Muhammadiyah Lamongan hospital.

The results of this study are in accordance with research Nursal, et al (2015) in RSUP DR. M. Djamil Padang in January to December 2014. The results showed that there was a significant relationship between age with the incidence of preeclampsia with OR value of 4,886 which means pregnant women <20 years old and > 35 years at risk 4,886 times at risk of preeclampsia compared with pregnant women aged between 20-35 years. The results of Aghamohammadi and Nooritajer (2011) also stated that there was a relationship between mother age > 35 years to the incidence of severe preeclampsia (PEB).

Age at risk of developing hypertension (preeclampsia and eclampsia) in pregnant women <20 years and > 35 years. Hypertension (preeclampsia and eclampsia) increases at a young age, in relation to the incomplete organs in the body of a woman to reproduce, and psychological factors that tend to be less stable also increase the incidence of preeclampsia at younger ages (Cunningham, 2006). The prevalence of preeclampsia in pregnant women at a young age is probably caused by the lack of understanding of people about healthy reproductive age, so many are pregnant at a young age.

Parity Relationships with Preeclampsia

The result of statistical test on maternal parity was obtained by p value of 0.000 where p is smaller than 0.05 which means there is relationship between parity with preeclampsia occurrence. OR results from maternal parity of 5,825, which means mothers with primiparity parity have a risk of having preeclampsia 5.825 times greater than mothers who are not primipara. The meaning of the incidence of preeclampsia can occur in primipara parity, multipara and multipara. Mothers with zero parity or called primiparous moms are considered as one of the major risks for experiencing preeclampsia in the hospital. Muhammadiyah Lamongan.

The results of this study are in accordance with the results of the study of Afridasari et al. (2012) who obtained OR statistical test results of 2.881 with a 95% confidence level showed that pregnant women with gravid status (primigravida) had a risk of having preeclampsia 2,881 times compared to pregnant women with gravida multigravida.

The results of this study are not in accordance with research Nurulia, et al (2015) with the results $p = 0.1$, which means there is no significant relationship between parity with the incidence PEB. While the results of OR with Confidence Interval 95% of 1.318 which means primigravida mother has a chance of 1.318 times greater experience PEB compared with multigravida mother.

According to Mochtar (2013) the incidence rate of preeclampsia as much as 6% of all pregnancies, and 12% in primigravida pregnancy. According to some other authors the frequency is reported to be around 3-10%. It is more common in primigravids than in multigravids, especially young primigravids. Primigravida mothers have a tendency to preeclampsia two-fold greater. Mothers with children over 5 have a tendency to have problems during pregnancy. In primipara often experience stress in the face of labor. The emotional stress that occurs in primipara causes an increased release of corticotropin-releasing hormone (CRH) by the hypothalamus, which then causes an increase in cortisol. The effect of cortisol is to prepare the body to respond to all stressors by increasing sympathetic responses, including responses aimed at increasing cardiac output and maintaining blood pressure. In women with preeclampsia, there is no decrease in sensitivity to the vasoactive peptide, so a large increase in blood volume directly increases cardiac output and blood pressure.

Relationship History Hypertension with Preeclampsia

The results of statistical tests on hypertension history obtained p value of 0.001 where p is smaller than 0.05, which means there is a relationship between history of hypertension with the incidence of preeclampsia in maternal mothers. OR results from a maternal hypertensive history of 2.717, which means women with a history of hypertension had a risk of having preeclampsia 2.717 times greater than mothers with no history of hypertension. Meaning, the incidence of preeclampsia is influenced by history of maternal hypertension before pregnancy in Muhammadiyah Lamongan hospital.

The results of this study in accordance with research Astuti, et al (2013) in dr. Moewardi Surakarta, with result p value 0,031 <0,25 mean there is significant influence between history of hypertension with the happening of severe preeclampsia in pregnant woman trimester three. In the Nelawati study, the results obtained p = 0.002 (p <0.05), which means that there is a relationship between history of hypertension with preeclampsia in pregnant women. While the results of this study is not in accordance with the results of research Nurulia (2015) with the result that the data obtained there is no mother with a history of hypertension experienced PEB, so cannot be tested chi-square. So, it can be said that women who do not have PEB do not have a history of hypertension.

According to Cunningham (2006) one third among women with high blood pressure after 30 weeks of pregnancy without any other symptoms, about 20% showed a more prominent rise and could have one or more preeclampsia symptoms, such as edema, proteinuria, headache, epigastric, vomiting, superimposed preeclampsia, even eclampsia and cerebral hemorrhage.

Hyperplacentalosis with Preeclampsia

The results of statistical tests on hyperplacentalosis obtained p value of 0.002 where p is smaller than 0.05, which means there is a relationship between hyperplacentalosis with the incidence of preeclampsia in maternal mothers. As for OR results from hyperplacentalosis of 6.603, which means that women with hyperplacentalosis have a risk of having preeclampsia 6,603 times greater than mothers who do not have hyperplacentalosis. Meaning, hyperplacentalosis is a risk factor for the incidence of preeclampsia in Muhammadiyah Lamongan hospital.

The results of this study in accordance with the results of research Afridasari (2012) with statistical test results obtained OR value of 2.529 with 95% confidence level indicates that pregnant women with hyperplacentalosis have a risk of having preeclampsia 2,529 times compared with pregnant women with no hyperplacentalosis.

Hyperplacental is also considered a predisposing factor for the occurrence of preeclampsia, because excessive trophoblast may decrease uteroplacental perfusion which further affects endothelial activity that can lead to vasospasm and vasospasm is the basis of pathophysiology of preeclampsia / eclampsia.

CONCLUSION

1. There is a significant relationship between age, parity, history of hypertension and hyperplacental with the incidence of preeclampsia in Muhammadiyah Lamongan Hospital in 2017.
2. Mothers with age <20 and> 35 years have a risk of 0.115 times greater for preeclampsia.
3. Mothers with primiparity parity have a risk of having preeclampsia 5.825 times greater.
4. Mothers with a history of hypertension have a risk of having preeclampsia 2.717 times greater.
5. Mothers with hyperplacental have a risk of preeclampsia 6,603 times greater.

SUGGESTION

For health workers actively provide health education and encourage pregnant women to routinely conduct Ante Natal Care (ANC).

For educational institutions are expected to provide learning to students about preeclampsia so that students can do pembedian care midwifery properly and correctly.

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