

**THE RELATIONSHIP BETWEEN PREECLAMPSIA AND PARITY IN MATERNAL BIRTH IN RSUD MUHAMMAD SANI KARIMUN**

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**Abstract**

**Background :** In Indonesia, eclampsia in addition to bleeding and infection is still the main cause of maternal mortality and a high cause of perinatal mortality. Therefore, early diagnosis of preeclampsia, which is a preliminary level of eclampsia, and its handling need to be implemented immediately to reduce maternal and child mortality (Prawiroharjo, 2012).

**Method :** The research design used was case control. Population is the whole object of research. The population in this study were all women who gave birth at Muhammad Sani Karimun Hospital, namely 218 people with the number of preeclampsia incidents of 30 people. The number of cases to be used is 2 (two) times the number of cases, namely 60 people. The analysis used was the Odds Ratio (OR), which is a measure of the association of exposure (risk factors) with the incidence of disease in the risk group (exposed to risk factors) compared to the incidence of disease in the group that is not at risk (not exposed to risk factors).

**Result :** The results of the study, the value of the Prevalence Odds Ratio (POR) = 6,875 with a value of 95% Confidence Interval (CI) = 3,318-12,410.

**Congclusions :** The conclusion of this research is that respondents with high parity are 6.8 times more likely to experience preeclampsia than respondents with little parity.

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**Keywords: Preeclampsia, Parity, Maternal Child**

**INTRODUCTION**

Globally, every two minutes somewhere in the world, a woman dies as a result of complications of pregnancy and the chances of her newborn baby surviving are very slim. For each woman who dies, 20 to 30 suffer significant and sometimes lifelong problems due to their pregnancy (Unicef, 2012). Pregnancy, childbirth and postpartum complications are direct determinants of maternal mortality. The higher the cases of complications, the higher the cases of maternal mortality.

Maternal Mortality Rate (MMR) is still one of the problems of maternal and child health in Indonesia. The high MMR in Indonesia is 359 per 100,000 live births (KH) (SDKI, 2012). Pregnancy complications have an effect on maternal mortality with an odds ratio (OR) of 12.189 if the variables of labor

complications and disease history are kept constant (controlled), mothers who experience pregnancy complications are at risk of experiencing death 12.198 times greater than mothers who do not experience pregnancy complications. Meanwhile, delivery complications affected maternal mortality with an OR of 9.94. The types of complications as a direct cause of maternal death are bleeding 28%, eclampsia 24%, infection 11%, and other pregnancy complications 15% (Afdhal et al, 2012). Mothers who experienced complications in pregnancy tended to experience complications in their delivery 2.15 times compared to mothers who did not experience complications in their pregnancy (OR = 2.15; 95% CI 1.81-2.54) (Armugastini, 2010).

In Indonesia, eclampsia in addition to bleeding and infection is still the main cause of maternal mortality and a high cause of perinatal

mortality. Therefore, early diagnosis of preeclampsia, which is a preliminary level of eclampsia, and its handling need to be implemented immediately to reduce maternal and child mortality (Prawiroharjo, 2012)..

Preeclampsia is a condition that only occurs in human pregnancy. Signs and symptoms occur only during pregnancy and disappear rapidly after the fetus and placenta are born. There is no specific profile that identifies women who will develop preeclampsia. However, there are certain risk factors associated with disease progression: primigravida, grandemultigravida, large fetuses, pregnancy with more than one fetus, morbid obesity. (Prawiroharjo, 2012).

Preeclampsia plays a role in intrauterine mortality and perinatal mortality. According to Mochtar (1998) predisposing factors for the occurrence of preeclampsia are hydatidiform mole, diabetes mellitus, multiple pregnancy, hydrops fetails, obesity, and age more than 35 years. Meanwhile, according to Farrer (2001) several predisposing factors for the occurrence of pre-eclampsia are uniqueness in pregnancy, especially primigravida, uterine overdistention (such as multiple pregnancies, polyhydramnios, fetal abnormalities), complication of several medical conditions such as kidney disease, essential hypertension, diabetes, placental dysfunction. , for example, infarction or degeneration.

Preeclampsia and eclampsia are estimated to be the cause of maternal death 14% each year and are associated with high neonatal mortality and morbidity as well as high maternal angaka. In several developed countries such as Australia and England, preeclampsia is the leading cause of maternal death. The incidence of preeclampsia in Australia is 10-25%, in the UK it is 100 per 1 million pregnancies (Sumarni, 2014). In the United States, preeclampsia is also the cause of 15% of preterm births and 17.6% of maternal deaths (Rinawati, 2010).

Based on the 2012 Indonesian Health Demographic Survey (IDHS), the direct causes of MMR in Indonesia include: bleeding 42%, eclampsia / preeclampsia 13%, abortion 11%, infection 10%, prolonged labor 9%, and other causes 15% (IDHS, 2012). According to Djannah (2010) the incidence of preeclampsia in developing countries ranges from 0.3 percent to 0.7 percent, while in developed countries the preeclampsia rate is smaller, ranging from 0.05

percent to 0.1 percent. In Indonesia, severe preeclampsia and eclampsia are the causes of maternal mortality from 1.5 to 25 percent, while infant mortality is between 45 percent and 50 percent (Djannah, 2010).

Preeclampsia often occurs during the pregnancy of the first child, and rarely occurs in subsequent pregnancies, except in people with obesity, diabetes, hypertension or multiple pregnancies. Adolescent women in their first pregnancy and women who are over 35 years of age, have a very high risk. The distribution of the incidence of preeclampsia-eclampsia by age, was found in the age group of mothers less than 20 or more than 35 years 23.73% (Aeni, 2013)

Based on maternal audit data for Karimun Regency in 2017, the number of maternal deaths was 13 people consisting of 2 deaths due to bleeding (15.38%), 6 deaths caused by hypertension in pregnancy (46.15%), 1 death due to infection. (7.69%), 1 death was caused by disorders of the circulatory organs (7.69%), 3 people died due to other causes (23.07%).

Based on data from the Muhammad Sani Karimun Regional Hospital in 2016, the total number of deliveries was 541 with the number of preeclampsia cases as many as 111 cases. In 2017, the number of normal deliveries was 102 deliveries and the number of cesarean sections was 574 deliveries. In addition, the number of delivery patients with vacuum was 38 deliveries and 121 people with induction. Of the total deliveries that exist, 121 patients were diagnosed with preeclampsia and 10 were eclampsia in 2017.

This study aims to determine the relationship between preeclampsia and parity in materna

## **RESEARCH METHODS**

The research design used is a case control, which is an analytical study that analyzes the causal relationship using reverse logic, namely determining the disease (outcome) first and then identifying the cause (risk factors). This research was conducted at Muhammad Sani Karimun Hospital. Population is the whole object of research. The population in this study were all women who gave birth at Muhammad Sani Karimun Hospital, namely 218 people with the number of preeclampsia incidents of 30 people. The number of cases to be used is 2 (two) times the number of cases, namely 60

people. To determine the number of samples in this study, researchers used a systematic random sampling where the sample in this study were 30 mothers who had preeclampsia for the case group and 30 mothers who did not experience preeclampsia for the control group. The instrument in this study was a checklist sheet. Bivariate analysis was performed on the independent variables and the dependent variable which were suspected to be related or correlated. In this data analysis, statistical data testing was carried out, namely the "chi square" test, with the degree of confidence used that was 95% ( $p$  value  $<0.05$ ). The analysis used was the Odds Ratio (OR), which is a measure of the association of exposure (risk factors) with the incidence of disease in the risk group (exposed to risk factors) compared to the incidence of disease in the group that is not at risk (not exposed to risk factors)

### **RESEARCH RESULT**

One of the efforts made by the Muhammad sani Karimun Regional Hospital to reduce the incidence of preeclampsia is one of them by providing services at the KIA Poli which are open every working day for Antenatal Care (ANC) services and conducting regular and scheduled pregnancy checks. So that risk detection can be known as early as possible.

#### **Characteristics of Respondents**

It can be seen that of the 60 respondents in this study, it was found that most of the respondents were  $\leq 20$  years old or  $> 35$  years old as many as 37 people (61.7%). Most of the respondents experienced a single pregnancy as many as 56 people (93.3%). Most respondents did not experience diabetes as many as 57 people (95%) and most respondents experienced parity in a small amount ( $\leq 2$ ) as many as 31 people (51.7%).

#### **Hubungan Antara Paritas dengan Preeklampsia**

The results of the study, a total of 31 respondents with little parity who experienced preeclampsia were 15 respondents (48.4%). Meanwhile, of the 29 respondents with high parity, 15 respondents had preeclampsia (51.7%). The results of the chi square statistical test, obtained  $p$  value = 0.000, meaning that the  $p$  value is small than 0.05, so  $H_0$  failed to be rejected, thus indicating that there is a significant relationship between parity and the

incidence of preeclampsia in Muhammad Sani Karimun Regional Hospital.

The value of the Prevalence Odds Ratio (POR) = 6,875 with a value of 95% Confidence Interval (CI) = 3,318-12,410 means that respondents with high parity are 6.8 times more likely to experience preeclampsia than respondents with little parity.

### **DISCUSSION**

#### **Relationship Between Parity and Preeclampsia Incidence**

The results of the chi square statistical test, obtained  $p$  value = 0.000, meaning that the  $p$  value is small than 0.05, so  $H_0$  failed to be rejected, thus indicating that there is a significant relationship between parity and the incidence of preeclampsia in Muhammad Sani Karimun Regional Hospital. The value of the Prevalence Odds Ratio (POR) = 6,875 with a value of 95% Confidence Interval (CI) = 3,318-12,410 means that respondents with high parity are 6.8 times more likely to experience preeclampsia than respondents with little parity.

Parity that is at risk of experiencing complications, namely if not pregnant for 8 years or more since the last pregnancy, experiencing a pregnancy with a duration of at least 20 weeks for 5 times or more, and pregnancy occurring within 3 months of the last delivery (Lockhart, 2014). Parity 1 to 2 is the safest parity in terms of maternal mortality. (Sukaesih, 2012).

The results of this study are in line with research conducted by Huda Hanum at RSUP DR. M. Djamil Padang in 2013, there were a total of 94 cases. The results showed that there was a relationship between age and parity on the incidence of preeclampsia, while multiple pregnancy, obesity and a history of diabetes mellitus did not show a significant relationship and was not a risk factor for preeclampsia in maternal at RSUP DR. M. Djamil Padang in 2013.

The results of Asmana's research in 2013 stated that preeclampsia can cause dangerous complications for the mother and the fetus, which can lead to death. Several risk factors such as extreme age ( $<20$  &  $> 35$  years) and nulliparity. Both are non-modifiable risk factors. The aim of this study was to determine the relationship between age and parity with the incidence of severe preeclampsia. Research has been carried out at the Medical Records Division of the Achmad Mochtar Bukittinggi

Hospital on the data of all obstetric and gynecological inpatients from 2012 to 2013. The study used an analytical method with a cross sectional study design. The research analysis used the prevalence ratio and the chi-square test with a confidence degree of 95%. This study found 162 cases (4.99%) of severe preeclampsia. The largest proportion of cases was found in the extreme age group (9.90%) and the multiparity group (8.68%). The prevalence ratio analysis concluded that extreme age was a risk factor for severe preeclampsia (RP = 1.476; CI = 1.094 - 1.922), and nulliparity could not be determined whether it was a risk factor or a protective factor (RP = 0.765; CI = 0.565 - 1.034). Based on the analysis with the chi-square test, it was concluded that there was a significant relationship between age and severe preeclampsia ( $p = 0.014 < 0.05$ ) and there was no significant relationship between parity and severe preeclampsia ( $p = 0.096 > 0.05$ ).

The results of Muthoharoh's research, in 2016 data analysis based on the constingency coefficient statistical test with  $\alpha: 0.05$  obtained a correlation coefficient value of 0.707 with a significant value of  $p = 0.001 < 0.05$ , which means H1 is accepted. So the research shows that there is a relationship between parity and the incidence of pre-eclampsia in pregnant women at Puskesmas Gayaman, Mojokerto Regency.

Based on these data, it can be concluded that parity 3 and high parity  $> 3$  have a higher maternal mortality rate, the higher the parity the higher the maternal mortality. This is because in every pregnancy there is stretching of the uterus, if the pregnancy continues, the uterus will weaken so that it is feared that interference will occur during pregnancy, childbirth, and the puerperium.

### **CONCLUSION**

There is a relationship between parity and the incidence of preeclampsia in mothers giving birth at Muhammad Sani Karimun Regional Hospital with  $p$  value = 0.000.

### **SUGGESTION**

It is hoped that the puskesmas will be able to maximize the provision of information by health workers in disseminating information about the types of preeclampsia by means of counseling and counseling.

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