The Analysis Factors Premature Rupture Of Membranes At Ansari Saleh General Hospital Banjarmasin

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Abstract: The causes of maternal death are quite complex. In obstetric complications, one of them is an infection that can occur in childbirth assistance. Early rupture of membranes (ROM) is a serious problem because it can threaten maternal mortality. Also, this disease is not yet known about the true etiology and also the high number of cases that are increasing every year. The purpose of this study is to analyze the factors causing the ROM. The research method uses analytic survey with the type of retrospective design. Research location at Ansari Saleh Hospital. The case sample in this study was 85 mothers who had ROM, while the controls were 85 mothers who did not experience ROM. The results showed p value that age is 0,028, abnormalities of fetal location is 0,021 and history of ROM is 0,000. It can be concluded that the 3 variable have a relationship with the incidence of ROM, while parity was not related to ROM incident because have p value 0,099.

Keywords: Factors, Premature Rupture of Membranes, ROM, Fetal Location Abnormalities.

1. INTRODUCTION

Indonesia's health development is directed at achieving healthy Indonesia, namely the creation of people with healthy behavior, having the ability to reach health services and quality health standards in a fair and equitable manner, formulated based on the direction of global development as stated in the Sustainable Development Goals (SDGs). One target of the SDGs in 2030 is to reduce maternal mortality to 70 / 100,000 live births (LB) and neonatal mortality by 12/1000 LH. This target is supported by the Ministry of Health's Plan and Strategy in 2019 which is to reduce MMR from 359 / 100,000 LB based on the 2012 Indonesian Demographic Health Survey (IDHS) to 306 / 100,000 LB and neonatal mortality from 19/1000 LH to 9/1000 LB [1].

The cause of maternal death is a fairly complex matter, which can be classified as reproductive factors, obstetric complications, health services and socioeconomic. Included in obstetric complications one of which is an infection that can occur in the delivery assistance that does not pay attention to the requirements of asepsis-antiseptic, because of prolonged labour, premature rupture of membranes, and others. Premature rupture of membranes (ROM) is defined as the rupture of the membranes prematurely [2].

The incidence of premature rupture of membranes is close to 10% of all deliveries. Most premature rupture of membranes occurs in term pregnancies of more than 37 weeks, whereas less than 36 weeks does not have too many premature rupture of membranes [3].

Around the world based on World Health Organtition (WHO), the incidence of ROM ranges from 12% - 14% (WHO, 2012). In Indonesia, based on the results of the Indonesian Demographic and Health Survey, the incidence of ROM is around 8% - 10% of all deliveries [4].

The cause of ROM is not yet known with certainty. Some reports say that factors closely related to ROM are difficult to know. Possible predisposing factors for ROM such as: age, parity, misalignment, multiple pregnancy, Cephalo Pelvik Disproportion (imbalance between baby's size/weight compared with pelvic size), history of ROM, hydramnios, antepartum haemorrhage and vaginal trauma [5].

Based on data in Ansari Saleh General Hospital Banjarmasin in 2016 the incidence of ROM increased to 392 cases. The increase again occurred in 2017 as many as 410 cases. Based on the background above shows

that the ROM cases have increased in recent years. Therefore, it is considered important to conduct a study of the factors causing ROM.

2. METHODE

This research was conducted at the Ansari Saleh General Hospital Banjarmasin. The method used in this research is analytic sure by using a retrospective design. The population in this study were all maternity mothers in the Ansari Saleh General Hospital Banjarmasin, amounting to 556. The sample in this study amounted to 85 case samples, and 85 control samples, so that the total sample was 170 people. Analysis in this study using the chi square test [6].

3. RESULT

A. Univariate Analysis

1. Age

Table 1 Age Distribution

Age	Frequency	%
Risk (<20 & >35)	49	28,8
No Risk (20-35)	121	71,2
Total	170	100

Based on table 1 it is found that the average age of the respondents is in the No Risk category which is 121 people (71,2%)

2. Parity

Table 2 Parity Distribution

Parity	Frequency	%
> 2	54	31,8
≤ 2	116	68,2
Total	170	100

Based on table 2, the average parity of respondents is ≤ 2, which is 116 people (68,2%)

3. Fetal Disorders

Table 3 Fetal Disorders Distribution

Fetal Disorders	Frequency	%
Yes	27	15,9
No	143	84,1
Total	170	100

Based on table 3 it was found that the average respondent did not experience abnormalities in the location of the fetus as many as 143 people (84,1%).

4. History of ROM

Table 4 History of ROM

History of ROM	Frequency	%
Ever	35	20,6
Never	135	79,4
Total	170	100

Based on table 4 it was found that the average respondent had a history of ROM as many as 135 people (79.4%).

B. Bivariate Analysis

Table 5. Age Relationship With ROM

Variable	ROM		Total n (%)	P value	OR
Age	Yes n (%)	No n (%)			
Risk	31 (18,2)	18 (10,6)	49 (28,8)	0,028	2,137
No Risk	54 (31,8)	67 (39,4)	121 (71,2)		
Total	85 (50)	85 (50)	170 (100)		

Based on table 5 it can be seen that the results of the analysis of the relationship of age with ROM obtained p value of 0.028 and OR 2.137. So it can be concluded that there is a relationship between age and the incidence of premature rupture of membranes, where pregnant women aged <19 years and> 35 years at 2.1 times the risk of experiencing ROM during pregnancy compared to the age of mothers who are not at risk (20 - 35 years)

Table 6. Parity Relationship With ROM

Variable	ROM		Total n (%)	P value	OR
Parity	Yes n (%)	No n (%)			
> 2	22 (12,9)	36 (18,8)	54 (31,8)	0,099	0,578
≤ 2	63 (37,1)	53 (31,2)	116 (68,2)		
Total	85 (50)	85 (50)	170 (100)		

Based on table 6 it can be seen that the results of the analysis of the relationship of parity with ROM obtained p value of 0.099 and OR 0.578. So it can be concluded that there is no relationship between parity and the incidence of early rupture of membranes.

Table 7. Fetal Disorders relationship With ROM

Variable	ROM		Total	P	OR
Fetal Disorders	Yes n (%)	No n (%)	n (%)	value	
Yes	19 (11,2)	8 (4,7)	27 (15,9)		
No	66 (38,8)	77 (45,3)	143 (84,1)	0,021	2,771
Total	85 (50)	85 (50)	170 (100)		

Based on table 7 it can be seen that the results of the analysis of the relationship of fetal abnormalities with the ROM obtained p value of 0.021 and OR 2.771. So it can be concluded that there is a relationship between abnormalities in January and the occurrence of early rupture of membranes, where pregnant women who experience fetal abnormalities 2.8 times the risk of experiencing ROM compared to pregnant women who do not experience fetal abnormalities.

Table 8. History of ROM Relationship with ROM

Variable	ROM		Total	P	OR
Histori of ROM	Yes n (%)	No n (%)	n (%)	value	
Ever	27 (15,9)	8 (4,7)	35 (20,6)		
Never	58 (34,1)	77 (45,3)	135 (79,4)	0,000	4,481
Total	50 (50)	50 (50)	100 (100)		

Based on table 8 it can be seen that the results of the analysis of the relationship between the history of ROM and ROM obtained p value of 0,000 and OR 4,481. So it can be concluded that there is a relationship between the history of ROM with the incidence of early rupture of membranes, where pregnant women who have a history of ROM 4.5 times the risk of experiencing ROM compared to pregnant women who have no history of ROM.

4. DISCUSSION

1. Age Relationship with ROM

Based on table 5 it can be seen that the results of the analysis of the relationship of age with ROM obtained p value of 0.028 and OR 2.137. So it can be concluded that there is a relationship between age and the incidence of premature rupture of membranes, where pregnant women aged <19 years or > 35 years at 2.1 times the risk of experiencing ROM during pregnancy compared with the age of mothers who are not at risk (20-35 years). early. According to researchers, premature rupture of membranes can occur in pregnant women aged 35 years. Age less than 20 years is the age of delaying pregnancy, where the reproductive organs are not functioning optimally, the birth canal has not been able to completely refute the parts inside. The reproductive organs that have not been maximized result in less formation of connective tissue and imperfect vascularisation so that they form a thin and not strong membrane that can trigger premature rupture of the membranes. Patients who have predisposing factors for premature rupture of membranes

require early detection and management, so it is recommended to get pregnant at a safe age between 20-35 years. Preventive measures by health workers also need to be improved. Good communication, information and education can motivate mothers to check their pregnancy regularly so that they can detect complications as early as possible. This study is in line with the study of Habibah (2018) which states that age has a significant influence on the incidence of ROM, where groups of mothers at risk have a 4.115 times greater chance of premature rupture of membranes [7].

2. Parity Relationship with ROM

Based on table 6 it can be seen that the results of the analysis of the relationship of parity with ROM obtained p value of 0.099 and OR 0.578. So it can be concluded that there is no relationship between parity and the incidence of early rupture of membranes. According to the theory, mothers with multiparas and grandemultipara are common causes of premature rupture of membranes [8]. In multipara and grandemultipara, there have been more than one deliveries that can affect the strength of the uterine and abdominal muscles, this condition will affect the strength of the membrane to hold the amniotic fluid, making the amniotic fluid membrane more prone to rupture [9]. In addition, in multiparas with a thin cervical consistency, it will increase the likelihood of premature rupture of membranes due to intrauterine pressure at the time of delivery. In the case of infection proteolytic processes occur by microbes in the amniotic membrane making it easier for the membranes to rupture [10]. This research is not in line with existing theories. According to the researchers, this is because the average parity of mothers who were sampled even though there were 54 people with parity >2, but this is still within safe limits for pregnancy, and researchers associate with the age of mothers who are still in a safe age to carry out the pregnancy.

3. Fetal Disorders relationship with ROM

Based on table 7 it can be seen that the results of the analysis of the relationship of fetal abnormalities with the ROM obtained p value of 0.021 and OR 2.771. So it can be concluded that there is a relationship between fetal abnormalities with the incidence of early rupture of membranes, where pregnant women who experience fetal abnormalities 2.8 times the risk of experiencing ROM compared to pregnant women who do not experience fetal abnormalities. This study is in line with research conducted by Ridwan, et al (2014) which states that there is a relationship between fetal abnormalities and the incidence of ROM, where mothers who experience fetal abnormalities are 3.54 times more likely to experience ROM events compared to mothers who do not experience abnormalities fetus [11]

4. History of ROM with ROM

Based on table 8 it can be seen that the results of the analysis of the relationship between the history of ROM with ROM obtained p value of 0,000 and OR 4,481. So it can be concluded that there is a relationship between the history of ROM with the incidence of early rupture of membranes, where pregnant women who have a history of ROM 4.5 times the risk of experiencing ROM compared to pregnant women who have no history of ROM. A history of premature rupture of membranes is the history of a mother who had experienced a CDD in previous labour. History of premature rupture of membranes before 2-4 times the risk of experiencing premature rupture of membranes. The pathogenesis of premature rupture of membranes

is briefly due to a decrease in collagen content in the membrane so that triggers premature rupture of membranes and premature rupture of membranes especially in high-risk patients [12]. Women who have experienced ROM in pregnancy or before delivery will have a higher risk of pregnancy than women who have never experienced ROM because of the composition of the membrane that becomes fragile and collagen content decreases in subsequent pregnancies [13]. This study is in line with research conducted by Tahir, et al (2012) which states that there is a relationship between the history of ROM and the incidence of ROM. Mothers with a history of ROM were 4.7 times more likely to experience ROM compared to women without a history of ROM.[14]

So based on the results of research that has been done, of the four variables studied, only 3 variables were found to be significantly related to the incidence of premature rupture of membranes including age, fetal abnormalities, and a history of premature rupture of membranes. As for the parity variable it has no relationship with the incidence of premature rupture of membranes.

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