Relationship of Age and Parity with The Incidence of Perineum Rupture in Borneo Citra Medika Pelaihari Hospital

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ABSTRACT

Perineal rupture is a laceration on the perineum during delivery process (excluding iatrogenic rupture such as episiotomy). Several provinces in Indonesia in 2017-2018 reports that 1 in 5 cases of perineal rupture is shown to be fatal, one of many contributing factors in perineal rupture is age and parity. This study aims to find the relationship between age, parity, with perineal rupture on per vaginam (spontaneous) deliveries in RSIA Borneo Citra Medika, Pelaihari. This search use cross-sectional, analytic observational study that was conducted at RSIA Borneo Citra Medika from January to December 2017 with simple random sampling utilizing secondary data from medical record, total 208 samples. The result is perineal rupture was found on 16 (11.51%) samples with age <20 years old and >35 years old and on 123 (95.69%) samples with age 20-35 years old. Chi-square analysis showed no association between age and perineal rupture (p>0.05). Perineal rupture was found on 70 (50.35%) samples with primigravida and on 69 (49.65%) samples with multigravida. Chi-square analysis showed a strong association between parity and perineal rupture (p= 0.000). The conclusions are there was a significant relationship between parity with perineal rupture and there wasn't significant relationship between age with perineal rupture.

Keywords: Age, parity, perineal rupture

INTRODUCTION

Perineal rupture is a tear that occurs in the perineum during childbirth. The perineum is a very important part of physiology that not only plays a role in the birth process, but is also needed to control defecation and urination, maintain normal peristaltic activity and healthy sexual function.[1,2] Perineal trauma associated with birth has been associated with long-term maternal morbidities, such as dyspareunia, reduced sexual activity, chronic flat and fecal incontinence, anorectal abscesses, and rectovaginal vistas.[3]

Worldwide, in 2018 there were 2.7 million cases of perineal rupture in women giving birth. This figure is estimated to reach 6.3 million in 2050. The results of a study from the Bandung City Research and Development Center, which researched from 2017-2018 in several provinces in Indonesia, found that one in five maternity mothers who experienced perineal rupture will die with a percentage of 21.74%.[2] At Borneo Citra Medika Pelaihari Hospital, of the 208 patients who had vaginal delivery there without an episiotomy, 139 patients experienced spontaneous perineal rupture (66.82%) and 69 patients did not experience rupture (33.18%).

Perineal rupture can occur due to spontaneous rupture or episiotomy. Spontaneous perineal rupture can be caused by three factors, namely from maternal factors, fetal factors and delivery factors.[4] Some of the causes of perineal rupture in mothers in labor include the mother's age factor, perineal rupture is often found in women who are more than 30 years old, which is usually called primitua. Then the parity factor of the mother who gave birth more than 1 time, the elasticity of the perineum is hard and stiff, the baby's weight is more than 4000 grams, the width of the perineum with a normal size of 4 cm in the perineum, the speed of the fetal head passing through the pelvic floor, because the baby's head deflection is too fast, wrong delivery position or wrong way of pushing, and delivery by vacuum or forceps.[2,5]

The age relationship is described in the medical journal of obstetrics and gynecology which contains a study from the Royal College of Obstetricians and Gynecologists, stating that the safe age for pregnancy is between the ages of 20 and 35.[3] The results of Tri Ari Hastuti's research (2016) found that primiparous mothers are more at risk of perineal rupture when compared to multiparous mothers, this is following the results of Pratami's research (2015) which states that there is a parity relationship with the degree of perineal rupture in normal delivery mothers. The more elastic the perineum, the less likely it is to rupture the perineum. In the last months of pregnancy, there will be an increase in hormones that can soften the connective tissue when massaged in the perineal area regularly. Increased elasticity of the perineum will prevent the occurrence of perineal rupture and episiotomy. The results of another study by Sinsin (2008) and Mochtar (1998) in Endriani's research (2012) found that there was no relationship between maternal age and the incidence of perineal rupture, even though the mother's age was normal if she did not exercise and was not diligent in intercourse, she could experience perineal laceration.[6]

Another theory states that perineal tears occur in almost all first deliveries (primiparas) and not infrequently in subsequent deliveries. Mothers with parity of one or mothers of primiparity have a greater risk of perineal tears than mothers with more than one parity. Because the birth canal has been traversed by the baby's head, the perineal muscles have not stretched. The causes of perineal rupture in primiparas are due to flexibility of the birth canal/elasticity of the perineum, hasty and irregular straining. Meanwhile, multiparas can occur due to large baby weight, perineal fragility, poor maternal care so that labor is not controlled, such as maternal fatigue and slow labor.[7,8,9]

A safe, precise, and planned delivery is highly expected to minimize the incidence of perineal rupture and it is hoped that the rescuer can perform an episiotomy in labor with the right indications so that the rupture is regular and accelerates healing.[10] Until now, research on the relationship between parity and maternal age has not been carried out at Borneo Citra Medika Pelaihari Hospital. This study aims to analyze the relationship between parity and maternal age with the incidence of perineal rupture at Borneo Citra Medika Pelaihari Hospital.

METHOD

This research used the analytic observational method with cross-sectional. The study population was all mothers who gave birth at Borneo Citra Medika Hospital in 2017 with a total of 308 people. Sampling using a simple random sampling method. The research sample was all mothers who experienced vaginal delivery at Borneo Citra Medika Hospital with a minimum sample size based on the Lemeshow formula was 189 people with a 10% correction factor added to 208 people. Samples were taken randomly using secondary data on patient registration in the delivery room of RSIA Borneo Citra Medika. The independent variables of this study were the mother's age at

delivery and the number of parities. The dependent variable in this study was the incidence of perineal rupture.

Data analyzes used descriptive and inferential using by Chi-Square Test with 95% confidence interval.

RESULT AND DISCUSSION

Based on the results of the study obtained data on age, parity and the incidence of perineal rupture in the delivery room of Borneo Citra Medika Hospital. Maternal age data at delivery is shown in Table 1.

Table 1. Distribution of maternal age at Borneo Citra Medika Hospital January – December 2017

No	Age (years old)	Number	%
1.	<20 and >35	23	11.05%
2.	20-35	185	88.95%
	Total	208	100%

Based on the data in table 1, the number of samples aged 20 years - 35 years is 185 samples (88.95%), with ages <20 years and >35 years, namely 23 samples (11.05%). The distribution of maternal parity is as shown in the following table 2.

Table 2. Distribution of maternal parity at Borneo Citra Medika Hospital January – December 2017

No	Parity Amount	Number	%
1.	Primipara	78	37.5%
2.	Multipara	130	62.5%
	Total	208	100%

Based on the data in table 2, it was obtained from a total sample of 208 that the highest number of parity was multipara, namely 130 samples (62.5%). While the primipara samples amounted to 78 samples (37.5%). The incidence of perineal rupture from the respondents taken is as follows Table 3.

Table 3. Distribution of the incidence of perineal rupture at Borneo Citra Medika Hospital January – December 2017

No	Rupture/Not Rupture	Number	%
1.	Rupture	139	66.82%
2.	Not rupture	69	33.18%
	Total	208	100%

Based on the data in table 3, from a total of 208 samples, the number of samples with perineal rupture was 139 samples (66.82%), while those without rupture were 69 samples (33.18%).

An illustration of whether or not there is a relationship between the variable number of maternal parity and the incidence of perineal rupture is obtained by cross-tabulation (cross table) of these variables and data analysis using chi-square test with 95% confidence level.

Table 4. The relationship between the variable number of maternal parity with the incidence of perineal rupture

Parity Amount	Rupture Perineum				Total		P-value
	Rupture	%	Not Rupture	%	Number	%	
Primipara	70	33.65%	8	3.85%	78	37.5%	0.000
Multipara	69	33.17%	61	29.32%	130	62.5%	

In Table 4, the data from the study on the number of parity mothers with the incidence of perineal rupture at Borneo Citra Medika Hospital revealed that the number of parity primiparous mothers experienced perineal rupture as many as 70 samples (33.65%), while the number of parity multiparas experienced perineal rupture as many as 69 sample (33.17%).

The results of statistical test analysis data for parity in Table 4 and perineal rupture at Borneo Citra Medika Hospital got a p-value of

0.000 (p> 0.05), then H_0 was rejected, meaning that there was a relationship between the number of maternal parity and the incidence of perineal rupture. More less of parity number made the higher risk of perineum rupture.

This is following the theory that perineal tears occur in almost all first deliveries (primiparas) and not infrequently in subsequent deliveries. Mothers with parity of one or primiparous mothers have a greater risk of perineal tears than mothers with more than one parity. This is because the birth canal has never been traversed by the baby's head so that the perineal muscles have not stretched.[2,9,11]

According to Sarwono, primiparas who give birth to term babies, birth canal injuries cannot be avoided. According to Wikjosastro, the mucosal and skin layers of the perineum in a primiparous mother are prone to rupture. This happens because the head of the fetus is born too quickly, previously in the perineum, there is a lot of scar tissue, at delivery there is shoulder dystocia, the mother is pushing too fast.[2,8] The results of this study are supported by Tri Ari Hastuti *et al* that there was a relationship between age and perineal rupture and the relationship is statistically significant.[6]

Analysis of the data that shows the relationship between maternal age at delivery and the incidence of perineal rupture is as shown in Table 4. To obtain an overview of whether there is a relationship between maternal age and the incidence of perineal rupture, a cross-tabulation table (cross-table) was made on these variables and data analysis was carried out using chi-square test with CI: 95%.

Table 5. The relationship between maternal age and the incidence of perineal rupture

Age (years)	Rupture Perineum				Total		P-value
	Rupture	%	Not Rupture	%	Number	%	
<20 dan >35	16	7.69%	7	3.37%	23	11.06%	0.767
20-35	123	59.13%	62	29.8%	185	88.94%	

Based on table 5, the age group of 20-35 years in the age category that is not at risk has a 95.69% probability of rupture of the perineum and an 89.86% probability of not rupture. These data are supported by the p-value which shows p=0.767 which means that there is no relationship between maternal age and the incidence of perineal rupture.

Another factor besides age that may affect is the birth weight of the baby, this is as explained in Rizky et al's research that there is a relationship between birth weight and the incidence of perineal rupture.[12] This study is in line with the research of Priharyanti et al which stated that there was no relationship between maternal age and the incidence of perineal rupture.[13]

Even though the mother's age is normal, if she does not exercise and is not diligent in intercourse, she can experience perineal laceration. The flexibility of the birth canal is reduced when the mother-to-be who lacks exercise or her genitalia is often exposed to infections. The infection will affect the connective tissue and muscles below and make the flexibility lost (because the infection can make the birth canal stiff). This is also influenced by narrow perineum and perineal elasticity so that it will be easy for birth canal tears or perineal lacerations to occur, therefore babies who have a maximum head circumference will not be able to pass through it, causing perineal lacerations.[3,7,14]

CONCLUSION

Based on the results and discussion of this study, it can be concluded that there is a relationship between the number of parity with the incidence of perineal rupture and there is no relationship between age and the incidence of perineal rupture at Borneo Citra Medika Pelaihari Hospital.

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