



Original Research

Incidence of Neonatal Asphyxia Events In Mothers Maternity With Early Ruptured Amniotic Fluid

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Abstract

Asphyxia and Intrauterine fetal dead (IUFD) are a threat if a premature rupture of membranes is not immediately treated quickly and appropriately. Neonatal asphyxia can occur due to complications from premature rupture of membranes. IMR in Indonesia is the fifth country for ASEAN countries, 35/1000 birth. Based on data from RA Kartini Hospital in Jepara, asphyxia cases from approximately (12,6%) and incidence of premature rupture of membranes 816 cases or around (85,8%). While the incidence of neonatal asphyxia born from PROM totalled 15 cases or about (1,6%). This research using quantitative descriptive methods with cross-sectional design. This research was conducted on April 21-23, 2020 using a total sampling method of 148 respondents. The data used are secondary data with a single variable, namely the incidence of neonatal asphyxia in mothers with maternity premature rupture of membranes. Data analysis uses a descriptive statistical test. Aims to know the description of the incidence of neonatal asphyxia in mothers with maternity premature rupture of membranes in General Hospital of Raden Ajeng Kartini Jepara 2019 and describe the incidence of neonatal asphyxia in mothers with maternity premature rupture of membranes in General Hospital Raden Ajeng Kartini Jepara 2019. The result showed that of 148 respondents on average had no risk age (20-35 years) as many as 120 respondents (81,1%) and the average parity PROM mothers as many as 148 respondents had multiparous parity of 85 respondents (57,4%). Then from 148 PROM mothers, 6 respondents (4,1%) gave birth to babies who had asphyxia. The highest incidence of neonatal asphyxia in mothers with maternity premature rupture of membranes was mild asphyxia of 3 respondents (2,0%), moderate to severe asphyxia of 2 respondents (1,4) and moderate asphyxia of 1 respondent (0,7%). The average degree of asphyxia in women with premature rupture of membranes is mild asphyxia.

INTRODUCTION

Neonatal asphyxia is a condition in which the baby is unable to breathe spontaneously and regularly after birth. This is caused by fetal hypoxia in the uterus. One of the causes

of asphyxia in newborns is complications of early rupture of amniotic fluid due to the occurrence of funicular prolapse, namely the umbilical cord is depressed between the baby's head and pelvis, resulting in compression that causes the cessation of

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fetoplacental perfusion resulting in reduced blood flow from the mother to the fetus so that the baby has hypoxia or O₂ exchange disorders to fetal distress and continues to become asphyxia of the newborn.¹

Based on the survey demographic and Indonesian health on 2017 show mortality of neonates 1.000, 15 per live births the infant mortality rate per live births, 1.000 24 and the child mortality life 1.000. 32 per live births Child mortality rate has reached the target sustainable development (TPB / SGDS) 2030 which is 25 / 1.000. live births Neonatal death rate continued to decline from years of 1.000 1991-2017 32-15 live births.²

The causes of Maternal Mortality Rate in Indonesia are bleeding 25%, unsafe abortion 13%, eclampsia 12%, and 20% others. Infection is the third cause of high AKI. The cause of infection is due to the processes that are passed during pregnancy and childbirth such as premature rupture of membranes (PROM) 65%, febrile 17%, amnionitis 0.5-1.5%, urinary tract infections 15%. Premature rupture of membranes is the first sequence of causes of infection that can cause Maternal Mortality Rate.³

The incidence of premature rupture of membranes ranges from 10% of all pregnancies. In term pregnancy the incidence varies between 6-9%. Whereas in pre-term pregnancy the incidence is 2% of all pregnancies. Nearly all preterm premature rupture of membranes will be born before term or labor will occur within one week after rupture of the membranes.⁴

Based on data obtained from RA Kartini Hospital Jepara, cases of asphyxia from December 2018 to December 2019 totaled 120 cases or approximately (12.6%), from December 2018 to December 2019 the incidence of premature rupture of membranes was 816 cases or around (85.8%). Meanwhile, the incidence of neonatal asphyxia that was born from labor

of ruptured membranes was 15 cases or approximately (1.6%). The incidence of premature rupture of membranes has increased from year to year, according to medical records of cases of premature rupture of membranes, including the top 10 diseases that often occur in the hospital.⁵ Because of this background and the absence of this study, the authors are interested in researching the "Preview Event on Mother Maternity Neonatal Asphyxia Membranes Rupture With Early RA Kartini Hospital in Jepara district.

METHODS

This type of research is a descriptive study, which is research conducted to see a description and description of a situation.⁶ This type of research is a descriptive study of the incidence of neonatal asphyxia in women who give birth with premature rupture of membranes. This research design uses a cross sectional approach, which is a study that studies the relationship between risk factors (independent) and effect factors (dependent), which makes observations or measurements of variables once and at the same time.⁶ The design of this study by looking at medical records where the respondents studied were mothers who experienced premature rupture of membranes who gave birth to babies with asphyxia. The location in this study was carried out at the RA Kartini Jepara Hospital and was held on 21-23 April 2020. Population is all subjects who meet certain characteristics to be used in a study.⁶

The population in this study were all medical records of women who gave birth with premature rupture of membranes, as many as 148 cases recorded in the medical records of RA Kartini Hospital Jepara from October to December 2019. In this study, the sampling technique in this study used the total sampling method, where in taking the sample of population members were used as samples.⁷ In this study, the sample used was 148 cases of maternal medical

records with PROM. The research instrument is a tool used to obtain data.⁸ Medical records containing data on mothers who gave birth with PROM and APGAR-Score assessments of infants with asphyxia were used in this study to obtain data on mothers who gave birth to premature rupture of membranes and asphyxic babies. This study used secondary data from maternal medical record records with premature rupture of membranes and medical record records for asphyxia babies from October-December 2019, the questionnaire was filled in by researchers including: respondent identity including age, maternal parity, and incidence of neonatal asphyxia in mothers giving birth with premature rupture of membranes. The data in this study were analyzed using univariate analysis. Univariate analysis was performed on the variable incidence of neonatal asphyxia in women who gave birth with premature rupture of membranes.

RESULTS

Based on Table 1 shows that the frequency distribution of the age of mothers giving birth with premature rupture of membranes is mostly at the non-risk age (20 - 35 years) as many as 120 respondents (81.1%), young at risk age is 8 respondents (5.4%) and age 20 respondents (13.5%) at risk of being old. The mean age of women with premature rupture of membranes was 30.37 years. The frequency distribution of mothers with premature rupture of membranes is mostly multiparous as many as 85 respondents (57.4%), primiparous as many as 62 respondents (41.9%), then grande multipara as many as 1 respondent (0.7%). The mean parity of women with premature rupture of membranes was multiparous. The result shows that the frequency distribution of neonatal asphyxia in women with premature rupture of membranes is mild asphyxia by 3 respondents (2.1%), moderate severe asphyxia by 2 respondents (1.4%), and moderate asphyxia as many as 1 respondent (0.7%). The average status of asphyxia in

women with premature rupture of membranes is mild asphyxia.

Table 1
Distribution of the age, parity, and neonatal asphyxia of mothers giving birth with premature rupture of membranes (n = 148)

Indicators	f	%
Age		
Young Risk <20 Years	8	5.4
No Risk 20-35 Years	120	81.1
At risk Old > 35 years	20	13.5
Parity		
Primipara	62	41.9
Multiparous	85	57.4
Grande multipara	1	0.7
Neonatal asphyxia with premature rupture		
Mild asphyxia babies	3	2.1
Moderate asphyxia babies	1	0.7
Severe asphyxia babies	2	1.4
Not asphyxiated	142	95.8

DISCUSSION

The results of this study indicate that the frequency distribution of the age of mothers who give birth with premature rupture of membranes is mostly at non-risk age (20 - 35 years) as many as 120 respondents (81.1%), young at-risk age is 8 respondents (5.4%) and age at risk of old as many as 20 respondents (13.5%). The mean age of women with premature rupture of membranes was 30.37 years. The incidence of premature rupture of membranes at the age of the mother who is not at risk is due to an incompetent cervix at the age of the mother who is not at risk (20-35). Cervical incompetence is more common in mothers who are > 20 to 35 years old. This condition is a condition in which the flexibility of the cervix to withstand the pregnancy begins to disappear. This occurs due to repeated labor and a history of curettage. An incompetent cervix can also cause premature rupture of the membranes, this can occur because of a history of curettage and age 20-35 years which is caused by a lack of strength in the cervix to hold the conception, making it prone to complications of premature rupture of membranes.⁹ The age for optimal reproduction for a mother is 20-35 years.

Ages <20 and> 35 are classified as at risk in the process of preparing for pregnancy and childbirth. The age of a mother so much will affect her reproductive system. Because the reproductive organs are underripe and too old, their ability and plasticity to accept pregnancy have started to decrease. Maternal age at risk can lead to complications in mothers such as premature rupture of membranes and complications in infants.

Research conducted by Aprilla (2018) at Bangkinang Regional Hospital found that 32 respondents (58.18%) aged <20 and> 35 years old, the results research are by the theory that women who give birth are under 20 years of age or more than 35. years is a risk factor for premature rupture of membranes that can lead to maternal death.³ Affandi's research (2012) shows that most mothers who experience premature rupture of membranes are mostly at risk ages <20 and> 35 years (71.4%). This shows that most of the respondents aged 20-35 are of the healthy reproductive age with the lowest risk that occurs to mothers and their babies. The results of this study indicate that the frequency distribution of mothers giving birth with premature rupture of membranes is mostly multiparous as many as 85 respondents (57.4%), primiparous as many as 62 respondents (41.9%), then grand multipara as many as 1 respondent (0.7%). The mean parity of women with premature rupture of membranes is multiparous. Multiparous parity has a very high risk, this is because multiparous parity has experienced labor more than once so that it can affect the reduced strength of the uterine muscles which are very susceptible to complications of premature rupture of membranes. Based on the theory of primiparous parity and grand multipara, it is one of the factors of premature rupture of membranes. women with primiparous parity will be more at risk of experiencing complications of premature rupture of membranes than women with multiparous status because the uterus is still elastic and the reproductive organs are not ready to

accept a pregnancy. so that any adjustment is needed to the uterus. Whereas in the multiparous grande the incidence of premature rupture of membranes occurs more often because the resistance of the reproductive organs of the mother has begun to weaken and too often the mother gives birth so that pregnant women will again stretch the uterus and the strength of the connective tissue and vascularity decreases, causing fragility which can affect complications premature rupture of membranes.¹⁰

The results of Aisyah's (2012) study at Lamongan Regional Hospital stated that multiparity parity (80%) can affect the complications of premature rupture of membranes compared to primiparous parity (65%). The results of Pujiningsih's (2012) research at Sidoarjo Regional Hospital stated that the incidence of premature rupture of membranes occurred in mothers with primiparas parity of 55 respondents (77.46%), multiparity parity of 101 respondents (59.20%), and Grande multipara parity of 4 respondents. (36.36%). It is concluded that the parity of mothers who experience premature rupture of membranes in mothers with multiparous parity.¹¹ The results of this study indicate that the frequency distribution of neonatal asphyxia among women with premature rupture of membranes is mild asphyxia by 3 respondents (2.0%), moderate-severe asphyxia by 2 respondents (1.4%), and moderate asphyxia. as much as 1 respondent (0.7%). The average status of asphyxia in women with premature rupture of membranes is mild asphyxia.¹¹

Wiknjastro (2014) Premature rupture of membranes is one of the causes of complications in the fetus in the form of newborn asphyxia and infection. Hypoxia that occurs in the fetus can cause the baby to experience asphyxia after birth due to interference with the exchange of O₂ gas transport from mother to fetus, there is a disturbance in the supply of O₂ and in eliminating CO₂. Complications caused by

premature rupture of membranes, such as infection in the mother and fetus, resulting in prematurity and Respiratory Dystrome (RDS), can increase perinatal mortality and morbidity.¹²

The results of Utami's (2013) research at dr Soedarso Hospital, there was a relationship between PROM and the incidence of neonatal asphyxia but there was no significant relationship (Adjusted OR = 0.96; 95% CI = 0.254-1.389; p = 0.811). For respondents, mothers with PROM 90 were (52.63%) and mothers without PROM were 81 (47.37%) and 27 asphyxic babies from PROM mothers were 27 (47.37%) and asphyxic babies born to mothers who were not PROM as much as 30 (52.63%). In this study, the researchers concluded that there was an association between PROM incidence and asphyxia but there was no significant relationship, but the factor that greatly influenced the incidence of asphyxia was obstructed labor, labor duration > 12 hours had a 20.04 greater chance of occurrence of neonatal asphyxia compared to delivery <12 hours.¹³ Komsiyati (2014) research results at Ambarawa Regional Hospital found that mothers who experienced PROM experienced asphyxia incidence (69.4%), while mothers who did not experience PROM incidence of asphyxia (15.7%). Where babies born to mothers who experience premature rupture of membranes are at risk of 2,809 times greater risk of neonatal asphyxia than babies born to mothers who do not experience premature rupture of membranes.¹⁴

The assumption of the researchers in this study concluded that the preparedness of medical personnel and medical personnel in dealing with the incidence of PROM in mothers who gave birth at RA Kartini Jepara Hospital was to prevent complications that would occur to the mother and the fetus. Judging from the medical record data of RA Kartini Jepara Hospital 2019, it can be concluded that the condition of PROM in mothers giving birth <24 hours and > 24 hours will be carried out quickly such as: providing stimulation to accelerate the

opening of the cervical mouth, vacuum action due to too slow progress in labor and delivery through Sectio Caesarea. Measures to prevent neonatal and maternal emergencies endeavored at reducing the risk of complications such as neonatal emergency in the form of newborn asphyxia.

CONCLUSION

The most incidence of neonatal asphyxia in women with premature rupture of membranes was mild asphyxia as many as 3 respondents (2.0%), moderate asphyxia by 2 respondents (1.4%), and moderate asphyxia by 1 respondent (0.7%).

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CONFLICTS OF INTEREST

Neither of the authors has any conflicts of interest that would bias the findings presented here.

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