The Correlation Between Maternal Anemia, Newborn Baby Weight and Long Intranatal Stage II at Dr. H. Moch. Ansari Saleh Hospital Banjarmasin.

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ABSTRACT

Background: Long intranatal is one of the causes of maternal mortality. The long Intranatal is classified into 3 phases, long latent phase, long active phase, and Long Intranatal Stage II. Long intranatal stage II causes the maternal mortality of 8% in the world, and 9% in Indonesia.

Objective: To identify and Analyze Correlation between maternal anemia, Newborn baby Weight and long intranatal stage II at Dr. H. Moch. Ansari Saleh Hospital Banjarmasin.

Methods: The research used an analytical survey with case control approach. Sampling techniques in this research was total sampling. Data was collected by by using checklist and data processing by using chi square test.

Results: Chi square test showed that there was a significant relationship between maternal anemia p = 0.000 with OR 18,627, so maternal anemia has more risk than no anemia to have experience long intranatal stage II. Also infant birth weight born p = 0,004 with OR 3,583, so the normal infant birth weight (2500-4000gr) has more risk than 4000 gr to long intranatal stage II.

Conclusion: there was a significant correlation between maternal anemia, newborn baby weight and long intranatal stage II.

Keywords: Newborn Baby Weight, Maternal, Anemia, Long Intranatal Stage II

I. INTRODUCTION

Public health degree in one country is assessed by several indicators such as Mortality, morbidities and nutritional status. Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR) are indicators in assessing the degree of public health in Indonesia. Maternal death is death during pregnancy or period 42 days after pregnancy, due to all causes associated with or aggravated by pregnancy or treatment, but not caused by accident / injury (Ministry of Health RI, 2014).

Based on the experience of the MDGs era (2000-2015), Indonesia has not succeeded in reducing maternal mortality. Sustainable development of the MDGs is the SDGs (2015-2030). One of the Goals in the SDGs is reducing the IMR to 70 per 100,000 live births by 2030 (Hoelman, et al, 2015).

According to a World Health Organization (WHO) report in 2014 it says that the Maternal Mortality Rate in the world is 289,000 inhabitants. Based on the report of the Directorate of Maternal Health during the period of 2010-2013, the cause of maternal mortality in Indonesia is bleeding, eclampsia, abortion, infection, and long partum. The long partum became one of the causes of maternal death directly, although the incidence rate was lower than for other causes (Ministry of Health RI, 2014). The long partum (intranatal) is classified into 3 ie, long latent phase extends, long active phase, and Long Intranatal Stage II (Prawirohardjo, 2010).

Long Intranatal Stage II is a labor which lasts more than 2 hours in primigravida and more than 1 hour on multigravida (Manuaba, 2008). The Long Intranatal Stage II is one of the causes of MMR and IMR because of complications that can occur to the mother and fetus.

Based on the report of South Kalimantan Provincial Health Office in 2016, IMR has decreased by 2015; 89 / 100,000 live births since 2010-2015 (DinKes, Kal-Sel Province, 2016). The Long Intranatal Stage II causes the death of 8% mother in the world , And in Indonesia alone the cause of maternal mortality as much as 9% (Ministry of Health RI, 2014). Based on the report of South Kalimantan Provincial Health Office in 2012, it is said that the incidence of long labor as much as 9% (Health Office South Kalimantan Province, 2012).

According to Prawirohardjo (2013), there are several factors causing Long Intranatal Stage II, such as abnormal contraction, fetal abnormalities, and abnormalities of the birth canal. abnormal contraction can be observed by several factors, such as exhausted, anemia. Normal hemoglobin level is required in labor for delivery of the baby and prevents the second stage of development (Wirakusumah, 2015). Normal hemoglobin levels optimize the function of blood as an oxygen carrier distributed throughout the body, the body will not get tired, weak lethargic luminance will

appear brighter and body performance will increase (Wirakusuma, 2015).

Another factor of Long Intranatal Stage II is the presence of abnormalities in the fetus, such as malpresentations, malposition, and fetal abnormalities. Large babies are one of the abnormalities in infants. The Second stage is more common in infants born with a greater weight than those who did not experience it. The baby's weight is related to the head circle size. Birth weight affects the long labor associated with pelvic size (Prawirohardjo, 2006).

Based on preliminary study at Dr. H. Moch. Ansari Saleh Hospital of Banjarmasin on January 31, 2017, there has been an increase in the number of incidents of Long Intranatal Stage II since 2013 until 2016. In 2013 there were 30 cases or (2%) of 3,126 deliveries. In 2014 there were 56 cases or (2%) of 5,951 deliveries. In 2015 there were 84 cases (1%) from 4,150 deliveries, and in 2016 93 cases or (1%) of 5,285 deliveries. Based on the above background, researchers interested in conducting research entitled "Correlation between Maternal Anemia, Newborns Baby Weight and with Long Intranatal Stage II at Dr. H. Moch. Ansari Saleh Hospital of Banjarmasin ".

MATERIALS AND METHODS

This research uses analytical survey method with case control design. The sample is divided into two case samples and control samples. Cases are all mothers who experienced Long Intranatal Stage II at dr. H. Moch. Ansari Saleh Hospital of Banjarmasin Year 2016 as many as 93 maternity mothers with total sampling technique, while control is maternal mother who did not experience Long Intranatal Stage II at dr. H. Moch. Ansari Saleh Hospital Banjarmasin, using a ratio of 1: 1 with sampling technique that is systematic random sampling. Data collection is by using research form with data processing using chi square test.

RESULTS

Univariate Analysis

Table 1 Distribution of the frequency of incedence of Long Intranatal Stage II Case and Control at Dr. H. Moch. Ansari Saleh Hospital of Banjarmasin.

No.	Incedence of Long Intranatal Stage II	Frequency	Percentase %
1	Case of Long Intranatal Stage II	93	50
2	Control of Long Intranatal Stage II	93	50
Total		186	100

Table 1 shows that the incidence of the Long Intranatal Stage II at dr. H. Moch. Ansari Saleh Hospital of Banjarmasin were 93 maternity mothers (50%). The control of Long Intranatal Stage II and case of Long Intranatal Stage II case were 93 maternity mothers (50%).

Table 2 Distribution of maternal frequency with anemia who experienced Long Intranatal Stage II and did not experience the Long Intranatal Stage II at Dr. H. Moch. Ansari Saleh Hospital of Banjarmasin.

No.	Anemia	Case		Control	
		F	%	F	%
1	Anemia	75	80,6	17	18,3
2	Non-Anemia	18	19,4	76	81,7
Total		93	100	93	100

Based on Table 2 the number of mothers who experienced anemia in the case group were 75 people (80.6%), and in the control group were 17 people (18.3%).

Table 3 Distribution of the frequency of newborn baby weight who has Long Intranatal Stage II experience and who did not at Dr. H. Moch. Ansari Saleh Hospital of Banjarmasin

No.	newborn baby weight	Case		Control	
		F	%	F	%
1	2500-4000 gr	86	92,5	72	77,4
2	>4000 gr	7	7,5	21	22,6
Total		93	100	93	100

Based on table 3 the total number of incidence of mother delivering normal newborn baby weight were 86 people (92,5%), and for control of the Long Intranatal Stage II with normal newborn baby weight is 72 people (77, 4%).

Bivariate Analysis

Correlation Between Maternal Anemia and the Incedence of Long Intranatal Stage II

Table 4 Results of Chi Square and Odds Ratio analysis of maternal anemia variables and the incident Long Intranatal Stage II at Dr. H. Moch. Ansari Saleh Hospital of Banjarmasin.

Anemia	Case		Control		Total	
	N	%	n	%	N	%
Anemia	75	80,6	17	18,3	92	49,5
Non-Anemia	18	19,4	76	81,7	94	50,5
Total	75	80,6	17	18,3	92	100

Chi Square p = 0,000, α = 0,05 p < α

Odds Ratio (OR) = 18,627 (8,9269 − 38,872)

Based on table 4 In case of maternal mothers who experienced anemia was 75 people (80.6%), while in the control group was 17 people (18.3%). Chi Square analysis results obtained p value = 0,000 at α = 0.05. Because the value of p <α means to indicate that there is a significant correlation between maternal anemia variable and the incident of Long Intranatal Stage II at Dr. H. Moch. Ansari Saleh Hospital of Banjarmasin. OR = 18,627, which means that maternal anemia 18,6 times of risk to experience Long Intranatal Stage II than non maternal anemia.

Correlation Between Newborn Baby Weight and The Incident of Long Intranatal Stage II

Table 5 Results of Chi Square and Odds Ratio analysis of Newborn baby weight variables and the incident Long Intranatal Stage II at Dr. H. Moch. Ansari Saleh Hospital of Banjarmasin.

Newborn Baby weight	Case		Control		Total	
	N	%	n	%	N	%
Yes	86	92,5	72	77,4	158	84,9
No	7	7,5	21	22,6	28	15,1
Total	74	100	74	100	148	100

Chi Square p = 0,004, α = 0,05 p < α

Odds Ratio (OR) = 3,583 (1,441 − 8,910)

Base on table 5 In the case of intranatal with normal newborn baby weight (2500-4000gr) of 86 people (92.5%), while in the control group were 72 people (77.4%). Chi Square analysis results obtained p value = 0.004 at α = 0.05. Because the value of p <α meaning to indicate that there was a significant correlation between variable of newborn baby weight and the incidence of Long Intranatal Stage II at Dr. H. Moch. Ansari Saleh Hospital of Banjarmasin. The value of OR = 3.583 which means that the mother who gave birth normal newborn baby weight (2500-4000gr) was 3.5 times more likely to experience the incidence of Long Intranatal Stage II a mother who gave birth to a baby> 4000gr.

DISCUSSION

1. Coorelation Between Maternal Anemia and Long Intranatal Stage II

The frequency distribution of maternal anemia with the incedent of Long Intranatal Stage II obtained from 186 maternity samples (both case and control group) at Dr. H. Moch. Ansari Saleh Banjarmasin, there were 75 people (80.6%) with anemia of case group, and 17 people (18.3%) with anemia from control group. The result of the statistical test showed that the result of the value (p = 0,000). It meaned that there was correlation between maternal anemia and the incedent of Long Intranatal Stage II, and from OR = 18,627 that mean maternal anemia has 18,6 times more risk to cause Long Intranatal Stage II than who did't have experienced anemia.

The results showed that all respondents from both case and control group experienced anemia which amounted to 92 respondents. According to Proverawati (2011), maternal anemia gives a bad influence, in pregnancy, intranatal and postpartum as well. It might lead to abortion, IUFD (Intra Uterine Fetal Dead), LBW, premature delivery, anemia during postpartum, postpartum hemorrhage, intrapartum or postpartum infections, congenital defects, and increase the risk of Long Intranatal Stage II.

Normal hemoglobin levels are required in labor for delivery of the baby and prevent Long Intranatal Stage II. Normal hemoglobin levels optimize the function of blood as an oxygen carrier for distribution throughout the body. The correlation between maternal anemia and the Long Intranatal Stage II is due to anemia that is occured at the time intranatal might cause the amount of oxygen in the blood to decrease. Reducing oxygen in the blood inhibits blood flow to the contracting muscles.

The result of this research is in line to Yusmi (2014) research entitled Correlation Between Antenatal Anemia and Long Intranatal Stage II at Sukoharjo District Hospital. There was correlation between Antenatal Anemia and Long Intranatal Stage II whose research use lambda correlation analysis with α = 0,05 and result of the research got value of P Value = 0,036 so there was correlation between antenatal anemia and Long Intranatal Stage II.

2. Correlation Between Newborn Baby Weight and the Incedent of Long Intranatal Stage II

Base on Frequency distribution of Newborn Baby Weight and the Incedent of Long Intranatal Stage II, which was obtained from 186 maternity samples at Dr. H. Moch. Ansari Saleh Banjarmasin from case and control, there were 86 persons (92.5%) of intranatal mother with normal birth weight (2500-4000gr) of case group, 72 (77.4%) of intranatal mother with normal baby weight (2500 -4000gr) from the control group. The result of the statistical test shows that the result of the value (p = 0,004) means that there wasa correlation between newborn baby weight and the incedent of Long Intranatal Stage II and the result of OR = 3,583, that the mother who has normal newborn baby weight (2500-4000gr) 5 times more risky to experience Long Intranatal Stage II than the mothers who has newborn baby weight > 4000gr (macrosomia).

In the study of 186 maternal women of all cases and control samples, there were three ways of Intranatal; spontaneous vaginal was 124 people (67%), perabdominal (Sectio Caesaria) 52 people (28%), and delivery by Extraction Vacuum 10 (5%). From some records in the medical record that the intranatal mother by perabdiminal (SC) had normal newborn baby wieght (2500-4000gr) due to CPD (Cefalo Pelvic Disproportion), there were also some intranatal by spontaneously pervaginam even though the baby's weight Born> 4000gr.

CPD is one of the causes of the incedent of Long Intranatal Stage II, and the proper management is by perabdominal labor (SC). Of the 93 mothers who experience Long Intranatal Stage, there were 18 intranatal mother done by SC, had normal birth weight (2500-4000gr) indicated as CPD; 4 mothers in SC on the indication of big baby (> 4000gr), and the rest were intranatal mother by SC , had normal baby weight(2500-4000gr) but unwritten indication. If the mother's pelvis has abnormalities such as CPD, then labor will occur longer (Long Intranatal Stage II). If the newborn baby weight> 4000gr (Macrosomia) but the mother does not experience CPD, the intranatal will not experience Long Intranatal Stage II. In addition to CPD, there are several other factors that require the delivery by SC such as malpresentation and malposition of the infants.

The results of this study are in line with research conducted by Fatoni (2011) on Maternal Age, Parity, and Birth Weight Weight correlated to Long Intranatal Stage II At Aji Darmo Lebak Hospital. The results of this study found that the value of P Value = 0.001 so that there is a correlation between the newborn baby weight and the incidence of the Long Intranatal Stage II.

CONCLUSION

There was a significant correlation between maternal anemia variable and the incident of Long Intranatal Stage II at Dr. H. Moch. Ansari Saleh Hospital of Banjarmasin. OR = 18,627, which means that maternal anemia 18,6 times of risk to experience Long Intranatal Stage II than non maternal anemia. And there was a significant correlation between

variable of newborn baby weight and the incidence of Long Intranatal Stage II at Dr. H. Moch. Ansari Saleh Hospital of Banjarmasin. The value of OR = 3.583 which means that the mother who gave birth normal newborn baby weight (2500-4000gr) was 3.5 times more likely to experience the incidence of Long Intranatal Stage II a mother who gave birth to a baby> 4000gr.

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