

Risks of Labor with Complications in Lindi Mara Christian Hospital 2017

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Abstract

Labor complications, especially bleeding, are still the cause of maternal mortality in Indonesia, including in East Sumba. Early detection of such risks is necessary to predict the likelihood of complications during labor so that labor is well planned, and quick and precise decisions can be made when complications occur (Health Ministry, 2009). The purpose of the study is to determine the factors associated with labor complications. This research is a descriptive survey research with case control design conducted in Lindi Mara Christian Hospital. The samples included in the research were 58 consisting of 29 case samples and 29 control samples. The findings showed that 71.4% of subjects had anemia, 58.6% were in the 20-35 age group and 55.2% were in the no-risk parity group. The result of bivariate analysis showed that anemia status was correlated with labor complication with $p = 0,001$, and $OR = 10,969$, which means that the risk for maternal complication among mothers with anemia is 10.96 times greater than non-anemic mothers. Parity was associated with complications of labor with values of $p = 0.002$, and $OR = 5.971$, which means the risk for having maternal complications in a mother with risky parity is 5.97 times greater than for those with no-risk parity. Factors associated with maternal complications are anemia and parity whereas age does not have a correlation. A more frequent pregnancy check is very important for a mother to detect the risk of complications during labor.

Keywords: *Risk factors, anemia, age, parity and complications of labor.*

I. INTRODUCTION

Complications during pregnancy and childbirth are the leading causes of death and disability among women of childbearing age in developing countries. The maternal mortality ratio is a risk (obstetric) associated with each pregnancy (WHO, 2016). About 830 women die from complications of pregnancy or labor around the world every day. It was estimated that by 2015, about 303,000 women had died during or after pregnancy and labor (WHO, 2014). Labor complications occur during the process of labor. Labor complications are divided into 2, namely complications at stage I and II and complications at stage III and IV. Complications at the first and second stage are prolonged labor, precipitate labor and dystocia while the complications at the third and fourth stage are bleeding (Purwoastuti and Walyani, 2015). In general, obstetric complications (pregnancy, labor and childbed) which include bleeding are influenced by various determinants. James McCarty and Debora Maine (1992) described various factors related to the complications including indirect determinants, direct determinants and the impacts of both complications as the direct cause of maternal death. Indirect determinants are divided into three: the mother's status in the family and society (education, income, employment and social independence), family status in the community (family income, position, family education and employment of family members) and community status (the amount of wealth and community resources) (McCarthy & Maine, 1992). Direct determinants that affect the complications include maternal health status that includes nutritional status, anemia, weight, height, infectious diseases, chronic conditions, obstetric history, reproductive status (age, parity, gestational distance and pregnancy status), access to services (services available, service quality and access to information) and aspects of health service use (use of health care, pregnancy care, use of modern services, harmful traditional practices and abortion). (McCarthy & Maine, 1992). Classified in the impact group of the above determinants are complications during pregnancy. Complications during pregnancy such as hyperemesis gravidarum, pre-eclampsia, eclampsia, abortion, ectopic pregnancy, and trophoblast disease can exacerbate maternal conditions during both pregnancy and labor. (Sofian, 2015). Based on the latest data in 2016, in Lindi Mara Christian Hospital, East Sumba there were 11 cases of maternal deaths, 2 of which were caused by bleeding while 29 other cases were caused by bleeding complications.

II. METHODS

This research is descriptive analytic survey research with case control design. This research was conducted at Lindi Mara Christian Hospital in July 2017. In this study the population is all the mothers registered in Lindi Mara Christian Hospital in 2016. There were 58 samples consisting of 29 cases of labor with bleeding complications and 29 cases of

labor with no complications (normal birth). The case samples were selected by the total sampling method whereas the control samples were selected randomly by (1:1) *one and one* sampling.

The data was taken from the list of maternity mothers in Lindi Mara Christian Hospital. The data were processed using SPSS Windows program 23.00. The data that had been processed were later analyzed step by step using Univariate Analysis to get the description of frequency distribution or the amount of proportion based on the characteristics being studied from all research variables. Bivariate Analysis was also used to know the correlation between two variables, namely independent variable and dependent variable. The statistic test used is *Chi Square* test. Then the correlation and significance were also assessed by looking at the value of p with the *Confidence Interval* of 95% and *Odds Ratio* (OR) generated to know the closeness of the correlation shared by the variables being studied.

III. RESEARCH FINDINGS

A. Sample Characteristics

1. Anemia Status

Table 1. The frequency distribution of anemic factors

Anemia status	Total	Percentage
No Anemia (Hb \geq 12,5 g/dl)	15	25,9
Anemia (Hb <12,5 g/dl)	43	71,4
Total	58	100

Table 1 shows that 43 of the subjects had anemia (71.4%) while those without anemia were 15 people (25.9%).

2. Age Group

Table 2. Frequency distribution of age group factors

Age Group	Total	Percentage
Age 20-35	34	58,6
Age <20 and > 35	24	41,4
Total	58	100

Table 2 shows 34 of the subjects were 20-35 years old (58.6%) while those aged <20 and > 35 years were 24 (41.4%).

3. Anemia Status

Table 3. Frequency Distribution of Parity Factors.

Parity	Total	Percentage
No Risk (1-3)	32	55,2
Risk (0 dan >3)	26	44,8
Total	58	100

Based on table 3, it was found that 32 of the research subjects were in parity group with no risks (55.2%) while the other 26 were in parity group with risk (44.8%).

B. Bivariate Analysis

The following describes the correlation between the variables of anemia status, age group and parity on the incidence of labor with bleeding complications and prolonged labor.

Table 4. Distribution of the incidence of maternal complications by anemia status in Lindi Mara Christian Hospital

		Labor Complications				p	OR
		No Complication		Complication			
		n	%	n	%		
Anemia Status	No Anemia	13	44,8	2	6,9	0,001	10,969
	Anemia	16	55,2	27	93,1		
Total		29	100	29	100		

Table 4 above shows that 27 of mothers with anemia experienced birth complications (93.1%). Based on the result of *Chi Square* test on the correlation between anemia status and labor complications, probability value ($p = 0,001$) was obtained so that H_0 is rejected, meaning the reliability is at 95% confidence level ($CI = 2,188 - 54,985$) that there is significant correlation between anemia status and the incidence of labor complication. With $OR = 10,969$, it means that the risk of having an anemic complication in anemic mother is 10.969 times greater than that of mothers with no anemia.

Table 5. Distribution of incidence of labor complications by age group in Lindi Mara Christian Hospital

		Labor Complications				P	OR
		No Complications		Complications			
		n	%	n	%		
Age Group	Age 20-35	19	65,5	15	51,7	0,286	1,773
	Age <20 and > 35	10	34,5	14	48,3		
Total							

Table 5 above shows that 15 of the women with complications (not at risk) are mostly in the 20-35 age group (51.7%). Based on the result of *chi square* test on the correlation between age group and labor complications, probability value ($p = 0,286$) was obtained so H_0 is accepted, meaning the reliability is at 95% confidence level ($CI = 0,616 - 5,102$) that there is no significant correlation between age group with incidence of complication labor.

Table 6. Distribution of incidence of maternal complications by Parity Lindi Mara Christian Hospital

		Labor Complications				P	OR
		No Complications		Complications			
		N	%	n	%		
Parity	No Risk (1 – 3)	22	75,9	10	34,5	0,002	5,971
	Risk (0 dan >3)	7	24,1	19	65,5		
Total							

Table 6 above shows that 19 (65.5%) of the women with complications are mostly in the risk group (0 and > 3). Based on the result of *chi square* test on the correlation between parity and labor complication, probability value ($p = 0,002$) was obtained so that H_0 is rejected, meaning the reliability is at the confidence level of 95% ($CI = 1,901 - 18,754$) that there is significant correlation between parity group and incidence of labor complication. With $OR = 5,971$, it means that the risk of having maternal complications in women with risky parity is 5.971 times greater than for those with no risk.

IV. DISCUSSION

Labor complication is an emergency that most often leads to maternal death. Many things can cause labor complications such as anemia, age and parity.

1. Anemic Factors

The status of anemia becomes one of the factors that affect the occurrence of labor complications in Lindi Mara Christian Hospital. The result of logistic regression analysis obtained was $OR = 10,969$ (95% $CI = 2,188 - 54,985$), which means that the probability labor with complications in mothers with anemia was 10.9 times greater than for non-anemic mothers.

The above results are supported by research conducted by Andriani at BPM. Mrs. Suhariyati Surabaya in 2014 also found that there was a significant correlation between anemia status and labor complications. Similarly, a research conducted by Ratnasari Rahman in RS PKU Muhammadiyah Jogjakarta in 2012 found an influence of anemia on the incidence of prolonged labor complications.

During the labor, primarily at stage II, the strength of a mother to push is necessary. This condition is determined by the role of hemoglobin to supply oxygen throughout the body. Adequate or normal hemoglobin levels are required to perform the function. Low levels of hemoglobin make the mother's body become weak so that it will disrupt the strength of pushing that eventually impacts on the amount of time spent at the second stage. (Andriani, 2014)

2. Age factor

The age factor in this study did not show any significant effect on the occurrence of labor complication in Lindi Mara Christian Hospital. This is in line with research conducted by Arisandi in 2015 which showed there is no significant correlation between age and the incidence of labor complications. (Arisandi, 2015).

Another study supporting the outcomes of this study is the findings of a research conducted by Fauzia and Syafiq in 2012 which pointed out that there is no correlation between age and the incidence of labor complications. Similarly, the findings of a research conducted by in 2012 Purba and Adisasmitha who concluded that there is no correlation between age and the incidence of labor complications.

3. Parity factor

The number of births or parities is a factor that affects the occurrence of labor with complications in Lindi Mara Christian Hospital. The result of logistic regression analysis obtained OR = 5,971 (95% CI = 1,901 - 18,754), which means that the probability of labor complications in mothers with risk parity is 5.9 times greater than that of mothers with no risk parity.

This result is in line with the research conducted by Simarmata using Riskesdas data in 2010 that obtained a significant result of the influence of parity on the incidence of labor complications. Mothers with a parity of more than 3 and a first pregnancy (primigravida) have a risk of having a labor complication 2.2 times greater than a mother with parity of 1-3 children (Simarmata, 2010).

Parity of 2-3 is the safest parity in terms of postpartum hemorrhage that can result in maternal death. The higher the parity or the higher the number of births the higher the risk of maternal death. Risk to parity 1 can be handled with better obstetric care, whereas the risk at high parity can be reduced or prevented by family planning.

V. CONCLUSIONS

Based on the results of the study, it can be concluded that the status of anemia and parity is a risk factor for the incidence of labor complications, while age is not a risk factor for the occurrence of labor complications. The most dominant variable is the status of anemia that can give the biggest contribution to the occurrence of labor complication in mother giving birth. It is therefore necessary to provide motivation on the importance of regular pregnancy checks to detect early labor complications and to provide good health services for mothers giving birth.

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