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Risk Factors of Mother Associated to the Event of Premature Birth

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Abstract
Background: *Infants with low birth weight and premature birth are infants who are most at risk of dying at birth. The main problem in preterm labor is about the care of the baby as the younger the gestational age, the greater the morbidity and mortality. This study aims to determine the risk factors of mothers related to early birth events in the general hospital of dr. A. Dadi Tjokrodipo in Bandar Lampung, Indonesia.*
Methods: *This type of research is an analytic correlation with a case-control approach. The subjects of the study were mothers who gave birth to premature babies, amounting to 55 people and control group: mothers who gave birth to healthy babies totaling 55 people. Data collection uses secondary data. Univariate data analysis was displayed, and Chi-Square test was employed to examine the relationship.*
Result: *The results showed that the variables that influenced the incidence of preterm birth were age (p value = 0.006), hypertension (p value = 0.01), preterm history (p value = 0.003), bleeding history in the third trimester (p value = 0.013;) and pregnancy distance (p value = 0.027).*
Conclusion: *To avoid premature births that can increase infant morbidity and mortality, health care facilities related to mothers and children must provide standard services to screen for the initial occurrence of complications or complications that affect infant welfare.*
Keyword: *Risk Factors, Premature Birth, Babies, Mothers.*

Introduction

Infant Mortality Rate (IMR) is one indicator to determine the health status in a country throughout the world. Data in Indonesia shows that infant mortality rates newborns are still quite high, especially at the time of the baby's birth, and the rest, during the first and first weeks after the baby's birth. The causes of high mortality include asphyxia (49-60%), infection (24-34%), Low Body Weight (LBW) (15-20%), labor trauma (2-7%), and congenital defects (1-3%) (Kurniasih , 2009).

Theoretically, premature risk factors are divided into 4 elements, iatrogenic factors, maternal factors, fetal factors, and behavioral factors. The iatrogenic factor is a factor of medical health. Maternal factors include prior preterm history, maternal age, maternal parity, placenta previa, cervical abnormalities (cervical incompetence), hydramnios, intra-amniotic infections, hypertension, and trauma. Fetal factors include twin pregnancies (Gemelli), dead fetuses and congenital disabilities (congenital abnormalities). Behavioral factors include mothers who smoke and drink alcohol.

Infant Mortality Rate (IMR) in Lampung Province in 2013 was 30 / 1,000 live births. Data from the Health Service of Bandar Lampung City,IMR in the city of Lampung city is 204 / 1,000 live births(Dinas Kesehatan Kota Bandar Lampung, 2014). The infant mortality rate is the highest mortality rate among IMR from Regency / City in Lampung Province. The causes of infant mortality include LBW (35%), asphyxia (36%), congenital (4%), infection (2%), digestion (1%), and others (22%). The occurrence of infant mortality due to LBW due to premature labor is often found in the hospital of dr. A. In Tjokrodipo, Bandar Lampung City when compared to hospitals of the same type in Bandar Lampung City, because the hospital is a type C referral hospital which is the first referral facility.

Total delivery in dr. A. Dadi Tjokrodipo Bandar Lampung in 2012 amounted to 987 deliveries, and there were 147 (14.9%) with preterm births, in 2013 there were 144 (14.4%) of 996 deliveries, and in 2014 there were 119 (12%) of 992 deliveries. Based on the overall data above found the causes of premature birth are trauma (55.5%), previous early history (18.9%), hypertension (11.1%), third trimester bleeding (9.4%) and dead fetus (5.1%).

Based on the causes of premature labor above, the occurrence of preterm labor is primarily due to maternal factors. Therefore, researchers would like to examine the risk factors for mothers related to early birth events in the particular hospital. The hospital is chosen because the hospital is the first referral center from inpatient health centers and independent midwivesin the city of Bandar Lampung.

Methods

This research is an analytical study with a case-control design. The population in this study was all mothers who gave birth prematurely in the hospital of dr. A. Dadi Tjokrodipo Bandar Lampung, Indonesia numbering 55 people. As control is a normal maternity mother taken from a medical record totaling 55 people made out of 528 people. The sampling technique used is simple random sampling through the lottery. The data used in the study is secondary data by taking data from documentation / medical records. Univariate data analysis is with percentage, and bivariate analysis is with Chi-Square test.

Results

The results of univariate analysis of maternal risk factor are summarized as follows. Of the 41 mothers with ages <20 years and ≥ 35 years, there were 28 (50.9%) in the case group and 13 (23.6) in the control group who gave birth to premature babies, so that the occurrence of preterm delivery was more significant at the age of <20 years and ≥ 35 years in the case group compared to maternal age <20 years and ≥ 35 years in the control group.From 33 mothers with parity ≥ 5, there were 19 (34.5%) in the case group and 14 (25.5) in the control group who gave birth to premature babies, so that the occurrence of preterm delivery was higher in parity ≥ 5 in the case group compared to parity ≥ 5 in the control group.

Of the 35 women giving birth with hypertension, 11 (20.0%) were found in the case group and 24 (43.6) in the control group who gave birth to premature babies, so that the occurrence of preterm delivery was higher in mothers who did not experience hypertension in the control group compared with the case group. Of the 38 women giving birth with preterm history, there were 27 (49.1%) in the case group and 11 (20.0) in the control group who gave birth to premature babies, so that the occurrence of preterm delivery was higher in mothers who had a preterm history in the case group compared to mothers who had a preterm history in the control group.

Of the 33 women giving birth with a history of bleeding in pregnancy there were 23 (41.8%) in the case group and 10 (18.2%) in the control group who gave birth to premature babies, so that the occurrence of preterm delivery was higher in mothers who had a history of bleeding in pregnancy in the case group compared with mothers who had a history of bleeding in the

control group. From 38 women with a gestational distance of ≤ 2 years, there were 25 (45.5%) in the case group and 13 (23.6) in the control group who gave birth to premature babies, so that the occurrence of premature birth was higher at a pregnancy interval of ≤ 2 years in the case group compared with gestational distance pregnancy 2 years in the control group.

The results of bivariate analysis of the relationship of variables the risk factor of mothers with preterm birth is summarized as follows. Of 41 people aged <20 years or ≥ 35 years, 28 people (50.9%) were respondents in the case group, and 13 people (23.6%) respondents in the control group had a preterm birth. The results of statistical tests obtained a p-value of 0.006 so that p-value <α (0.05), then Ho was rejected, which means that there is a statistical relationship between maternal age and the incidence of preterm birth. Statistically obtained the value of OR = 3,350 which means that at the age of <20 years or ≥ 35 years (high risk) has a chance of 3.350 times for the occurrence of preterm birth when compared with the age of 20-35 years (sound reproduction). Of the 33 people who gave birth ≥ 5 times, in which 19 people (34.5%) were respondents in the case group, and 14 people (25.5%) respondents in the control group experienced preterm birth. Statistical test results obtained a p-value of 0.405 so that p value> α (0.05), then Ho failed to be rejected, which means that there is no statistically significant relationship between maternal parity and the incidence of preterm birth.

Of the 35 people who had hypertension, 11 of them (20.0%) were in the case group, and 24 (43.6%) of the respondents in the control group had a preterm birth. The results of statistical tests obtained p-value 0.014 so that p-value <α (0.05), then Ho was rejected, which means that there is a statistical relationship between hypertension and the incidence of preterm birth. Statistically obtained the value of OR = 3.323 which means that hypertension has an opportunity of 3.323 times for the occurrence of preterm delivery when compared with not hypertension.

Of the 38 people who had a preterm history, 27 people (49.1%) were respondents in the case group, and 11 people (34.5%) respondents in the control group had a preterm birth. Statistical test results obtained a p-value of 0.003 so that the p-value <α (0.05), then Ho was rejected, which means that there is a statistically significant relationship between preterm history and the incidence of preterm birth. Statistically obtained the value of OR = 3.350, which means that mothers who have a history of preterm have a chance of 3.857 times for the occurrence of preterm birth when compared with women who do not have a history of preterm.

Of the 33 mothers who had a history of bleeding, 23 (41.8%) respondents in the case group and 10 (18.2%) respondents in the control group experienced preterm birth. The results of statistical tests obtained p-value 0.013 so that p-value <α (0.05), then Ho was rejected, which means that there is statistically a relationship between bleeding history with the incidence of preterm birth. Statistically obtained OR = 3.234 which means that mothers who have a history of bleeding have a chance of 3.234 times for the occurrence of preterm delivery when compared with women who do not have a history of bleeding.

Of the 38 mothers who had an interval pregnancy of ≤ 2, 25 people (45.5%) were respondents in the case group, and 13 people (23.6%) respondents in the control group had a preterm birth. The results of statistical tests obtained p-value 0.027 so that p-value <α (0.05), then Ho was rejected, which means that there is a statistically significant relationship between the distance of pregnancy and the incidence of preterm birth.

Discussion

The results showed that there was a relationship between age and the incidence of preterm birth. This is following the theory that at a gestational age of fewer than 20 years physically and psychologically still not ready to accept pregnancy, especially concerning the fulfillment

of the needs of nutrients during pregnancy that is necessary for the growth and development of the fetus. Whereas at the age of more than 35 years related to the decline and decline in endurance and various diseases that often afflict at that age (Yuniarti et al., 2012).

The results showed that there was no relationship between parity and the incidence of preterm birth. The results of this study are in line with the review of Ariana et al. (2013) which states that there is no significant relationship between maternal parity and preterm labor ($\rho = 0.638$).

The research found an association of hypertension with the occurrence of prematurebirth in hospitals A. Dadi Tjokrodipo Bandar Lampung. In pregnant women, hypertension is often accompanied by increased urine protein and can cause preeclampsia/eclampsia. Preeclampsia/eclampsia can result in the mother experiencing more severe complications, such as placental solution, cerebral hemorrhage, and concussion acute. Fetuses from mothers with preeclampsia/eclampsia increase the risk of premature birth, inhibition of fetal growth in the uterus and hypoxia (Bobak, 2004).

Therefore, if pregnant women experience hypertension from the beginning of pregnancy or before pregnancy, it is necessary to monitor the pregnancy intensely and be adequately managed so that the pregnant woman has controlled blood pressure. Besides, pregnant women with hypertension should be referred to a doctor and get special attention from the doctor.

The results showed that there was a correlation between preterm history and the incidence of preterm birth in mothers giving birth at A. Dadi Tjokrodipo Hospital Bandar Lampung City. The results of this study are in line with the theory that the obstetric history of a mother who gives birth will affect the next pregnancy, where a woman who has given birth to a premature baby has a risk of highergiving birth to a premature baby in the next pregnancy. A woman who has given birth to a baby weighing less than1.5 kg has a 50% risk of giving birth to a premature baby in the next pregnancy (Krisnadi, 2009).

Therefore to prevent the occurrence of preterm birth in pregnant women preterm history needs to be integrated antenatal, screening preterm history by applying in-depth assessment and counseling, carrying out early awareness of each clinical indicator (the emergence of contractions / his water, water-out, the presence of incompetent cervix) need to collaborate with doctors, especi-ally in terms of drug administration (tocolytic, antibiotics, and lung maturation drugs) astherapy of prophylactic. Such conditions if not resolved, immediately make a quick and safe referral to a hospital that has more complete facilities.

The results showed that there was an association between bleeding history with the incidence of preterm birth in RSUD dr. A. Dadi Tjokrodipo Kota Bandar Lampung. The occurrence of premature birth in RSUD dr. A. Dadi Tjokrodipo due to antepartum hemorrhage caused by placenta previa and abruption placental. If there is a lot of bleeding and can endanger the condition of the mother and fetus, labor cannot be avoided even though the gestational age is not enough months and premature labor occurs (Wijayanti,2008).

The results showed that there was a correlation between the distance of pregnancy and the incidence of preterm birth in RSUD dr. A. Dadi Tjokrodipo Kota Bandar Lampung in 2015. The results of this study are consistent with the theory that the distance of pregnancy that is too close is the distance between one pregnancy and the next pregnancy less than 2 years (24 months). Risks that may occur at close range pregnancy are miscarriage, anemia, prematurely born (premature birth), low birth weight (LBW), congenital disabilities and not optimal growth and development of children.

Therefore, it is recommended that every mother who is pregnant with the next child so that the distance of pregnancy between the previous child and the next child is more than 2 years. Besides, health workers, especially midwives in providing antenatal care services can screen for the incidence of preterm labor related to the distance of pregnancy.

Conclusion

Health professionals (midwives) must always be aware of mothers who are at risk of giving birth to premature babies. Also, health workers who work in the front line must pay attention to the condition of patients who are related to 4 Ts (too young, too old, too often and too much) premature birth delivery.

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