The Influence of Infant Birth Weight To Hyperbilirubinemia

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Abstract—The purpose of the study was to describe the influence infant birth weight of hyperbilirubinemia. Its complications can lead to jaundice with kern infant mortality. The method of this riset used all population of babies in neonatus rooms and used Data taken using a data sheet of the recapitulation is then processed in a descriptive with cross-tabulations and frequencies are tabulated. Bivariat analysis test used Spearman's Rho. The results showed infant birth weight normal infant birth weight (88,3%) and the influence infant birth weight of hyperbilirubinemia (P = 0.0001). Based on the result, we conclude that the infant birth weight is influenced to hyperbillirubinemia.

Keywords—infant; birth; weight; hyperbilirubinemia

I. INTRODUCTION

During the first week, newborns have an increasing of bilirubin in the blood whose grade more than normal. Normal value of indirect bilirubin 0.3-11 mg/dl and direct bilirubin 0.1-0.4 mg/dl. This condition is imperfection of infant bilirubin metabolism. Several factors influence hyperbilirubinemia are gestational age, asphyxia, birth trauma, infant birth weight, infection and hypoglycemia. Meanwhile, the side effects of hyperbilirubinemia are Encephalopathy and Kern Ikterus [1].

In Indonesia, hyperbilirubinemia is still a problem in newborns that are often faced by health workers occur in about 25-50% of term infants and higher in neonates less months (MOH, 2014). From the results of research conducted by Dwi Atika Rahmy in 2014 in Dr. Wahidin Sudiro Husodo Mojokerto neonates counted 958 neonates and who suffered from hyperbilirubinemia 142 (14.8%). Complications happened because of hyperbilirubinemia can be a risk to infant survival, eg kern jaundice and bilirubin encephalopathy [2].

The purpose of the study was to describe analyze the influence of infant birth weight to hiperbillirubinemia. This research used analytical research method. The population is all babies who are treated in the Infant Room. In this study the data collection is taken from the medical record. The infant birth weight has been researched in influenced to hyperbilirubinemia.

II. METHODS

The method used in this research is analytical research method. The population is all babies who are treated in the Infant Room of Muhammadiyah Gresik Hospital on November 2016. In this study the data collection is taken from the medical record at RS muhammadiyah gresik. Univariate analysis to describe research variables by making frequency distribution table. In the independent variables that will be described birth weight. While the dependent variable will be described as hyperbilirubinemia [3].

Bivariate analysis is used to find pattern / trend of relationship between two variables studied. Bivariate analysis was conducted to find the relationship of two variables, independent variable is birth weight with dependent variable (hyperbilirubinemia). The test used is Spearman's Rho test with significance degree $p \leq 0,05$. Then the related proven variables analyzed the effect of bivariate to determine the influence of each independent variable to the dependent variable. Because the variable is bound to categorical scale and without analyzed data normality then statistic test used is logistic regression analysis with significance degree $p \leq 0,05$. The research time is up to 30 November 2016. The research place is done in RS Muhammadiyah Gresik [3].

III. RESULTS AND DISCUSSION

TABLE I. THE CHARACTERISTICS OF AGE, EDUCATION, JOB AND PARITY OF BABY MOTHER IN BABY ROOM OF MUHAMMADIYAH GRESIK HOSPITAL

		Score	Percent
Mother's Age	At risk	27	19.7
	No at risk	110	80.3
Education	Low	34	24.8
	Medium	68	49.6
	High	35	25.5
Job	At work	49	35.8
	No at work	88	64.2
Parity	Primi	42	30.7
	Multi	95	69.3

Source : Data Rekam Medis

Based on the tabel 2 shows that most of the infant mothers in Muhammadiyah Gresik Hospital no at risk mother's age that was 110 (80.3%), medium education that was 68 (49.6%), did not work that was 88 (64.2%), and multi parity that was 95 (69.3%)

TABLE II. RELATIONSHIP BETWEEN BIRTH WEIGHT INFANT WITH HIPERBILIRUBINEMIA AT MUHAMMADIYAH GERSIK HOSPITAL

		Bilirubinemia		Total
		Normal	*Abnormal*	
Birth Weight	*Normal*	117	4	121
		96.7%	3.3%	100.0%
	Abnormal	11	5	16
		68.8%	31.2%	100.0%
Total		128	9	137
		93.4%	6.6%	100.0%

Uji Spearman's Rho (p =0,0001< α = 0,05)

TABLE III. THE EFFECT OF BABY WEIGHT TO HYPERBILIRUBINEMIA IN MUHAMMADIYAH GERSIK HOSPITAL

			Birth Weight	Bilirubinemia
Spearman's rho	*Birth weight*	Correlation Coefficient	1.000	.362**
		Sig. (2-tailed)	.	.000
		N	137	137
	Bilirubinemia	Correlation Coefficient	.362**	1.000
		Sig. (2-tailed)	.000	.
		N	137	137

TABLE IV. MULTIVARIATE TEST RESULT USING LOGISTIC REGRESSION TEST STEP 1

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1ᵃ	*Birth weight*	17.135	3.036E3	.000	1	.995	2.765E7

a. *Variable(s) entered on step 1: usiagestasi, beratlahir, infeksi.*

Based on the tabel 2 showed that baby with normal bilirubin levels were almost entirely normal birth weight of 117 (96.7%) compared with abnormal birth weight. While infants whose bilirubin levels are abnormal, a small percentage of abnormal birth weight is 5 (31.2%) compared with normal baby's birth weight.

To determine the relationship of birth weight of infant with hyperbilirubinemia was done by using Spearman's Rho test showed that P = 0.0001 means P <α value, Ho is rejected, which means there is a relationship between baby's birth weight and the occurrence of hyperbilirubinemia.

In accordance with research conducted in a study titled Relationship between Low Birth Weight with Hyperbilirubinemia Occurrence, that the results showed there was a relationship between low birth weight babies with the incidence of Hiperbilirubinemia in RSUD Prof. Dr. MargonoSoekardjoPurwokerto. This can be seen from the p value of 0.000 (p value <α 0.05), which means statistically shows there is a relationship between low birth weight baby with the incidence of Hiperbilirubinemia [4].

A normal newborn infant is an infant born in the back presentation of the head through the vagina without using the tool, at 37 weeks to 42 weeks, with 2500-4000 gram weight, Apgar value> 7 and congenital defects [5]. Low Birth Weight is an infant born with a weight less than 2500 grams. Low Birth Weight (LBW) may be premature (less months), may also be months and LBW is very susceptible to hypothermia and infection [6].

Macrosomia is the word that used, some what inappropriately to explain the enormous fetus-neonate. There is general agreement among obstetricians that neonates weighing less than 4000 grams are not considered too large, but a similar consensus on the exact definition of macrosomia has not been reached [6].

The results showed that the normal birth weight of the baby bilirubin condition is also normal, otherwise if the condition of birth weight is abnormal then it will cause abnormal bilirubin or hyperbilirubinemia.

IV. CONCLUSION

The baby with normal bilirubin levels were almost entirely normal birth weight of 117 (96.7%) compared with abnormal birth weight. While infants whose bilirubin levels are abnormal, a small percentage of abnormal birth weight is (31.2%) compared with normal baby's birth weight. There is an influence of infant birth weight to hyperbilirubinemia (P=0.0001 < α = 0,05).

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REFERENCES

[1] Maryunani, A. 2014. Asuhan Kegawatdaruratan Maternal dan Neonatus. Jakarta: CV. Trans Info Media.

[2] Atika Rahmy, D. 2014. Hubungan Maturitas Bayi Dengan Kejadian Ikterus Neonatorum Fisiologis Di Ruang Gayatri RSU Dr. Wahidin Sudiro Husodo Mojokerto. Available at : http : // repository. poltekkes majapahit.ac.id / index.php / PUB-KEB / article / view File / 186 / 156. diakses tanggal 28 Agustus 2016

[3] Notoatmodjo, S. 2015. *Metodologi Penelitian Kesehatan*. Jakarta : Rineka Cipta.

[4] Retdiasty Eka Kusumawardani, Hubungan antara bayi berat lahir rendah dengan kejadian hiperbilirubinemia di RSUD Prof. Dr. Margono Soekardjo Purwokert Tahun 2010. File :///C:/Users/Admin/AppData/Local/Temp/Rar$EXa0.329/Retdiasty%20 Danish%20%20Artikel%20Hubungan%20%20antara%20Bayi%20Berat %20Lahir%20Rendah%20dengan%20Kejadian%20Hiperbilirubinemia. htm

[5] Rukiyah, Y, A, dkk.2013. Asuhan Neonatus Bayi dan Anak Balita.Jakarta:CV. Trans Info Media.

[6] Yost, P, N, dkk. 2009. Obstetri Williams Paduan Ringkas. Jakarta, Penerbit Buku Kedokteran ECG.