Journal for Quality in Public Health ISSN: 2614-4913 (Print), 2614-4921 (Online)
Vol. 4, No. 1, November 2020, pp: 64-69
DOI: 10.30994/jqph.v4i1.152

Analysis of Factors that Affect Preeclampsia of Pregnant Women at Sultan Imaniddin Hospital Pangkalan Bun

Santa Betty[1], Indasah[2], Yenny Puspitasari2

[1]Sultan Imanuddin Regional General Hospital Pangkalan Bun
[2]Master of Public Health Study Program, Institute of Health Sciences STRADA Indonesia

E-mail:
santabetty51@gmail.com

Received : October 5, 2020

Accepted : November 24, 2020

Published : November 30, 2020

ABSTRACT

Preeclampsia is a hypertension caused by pregnancy that is characterized by hypertension, edema, and proteinuria after the 20 week. One of the causes of maternal death is preeclampsia. The purpose of this study was to determine the factors that influence the incidence of preeclampsia at Sultan Imanuddin, Pangkalan Bun The population is 236 respondents and the sample is 148 respondents with a random sampling technique. Data collection is observation. Data analysis using logistic regression test.
Based on the logistic regression test results obtained a history of significance hypertension (0,000), Gemelly significance (0.999), Obe.of significance (0.000). Simultaneously influenced the incidence of preeclampsia. The most influential variable was a history of hypertension with values (Exp.B: 131,238).
History of hypertension (X1) obtained a p value of 0.000 <0.05 so there is a influence with the incidence of preeclampsia (Y) means H1 is accepted. Gemelly (X2) obtained p value 0.999> 0.05 so there is no influence with the incidence of preeclampsia (Y) means H1 is rejected. Obesity (X3) obtained a p value of 0.000 <0.05 so there is a influence with the incidence of preeclampsia (Y) means H1 is accepted. The most dominant factor influenced the incidence of preeclampsia is a history of hypertension with a significance value of 0.000 <0.05 with (Exp B 131.238).

Keywords: Preeclampsia, History of Hypertension, Obesity

BACKGROUND

*Preeclampsia*is a hypertensive disease caused by pregnancy characterized by blood pressure ≥ 140/90 mmHg accompanied by edema, proteinuria after the 20th week, and if accompanied by seizures it is called eclampsia (Maryuni, 2009). Preeclampsia is a cause of high maternal mortality in addition to bleeding and infection, namely bleeding up to 28%, 24% preeclampsia, 11% infection with puerperal complications by 8%, prolonged labor by 5%, and 5% abortion (MOH, 2012) Likewise in other countries. developed as in Australia and the UK, preeclampsia is the leading cause of maternal death. The incidence of preeclampsia in Australia is 10-25% (Rozikhan, 2010).

According to a report from WHO, the causes of the majority of maternal deaths, about 75% of the total cases of maternal mortality, are bleeding, infection, high blood pressure during pregnancy (WHO 2014). For the case of Indonesia itself, based on data from the health center and information from the Ministry of Health (2014) the main causes of maternal mortality from 2010-2013 were bleeding (30.3% in 2013) and hypertension (27.1% in 2013). This is very ironic considering that the

various causes of maternal death above can actually be prevented, if the mother gets proper medical care.

The Maternal Mortality Rate (MMR) in Indonesia is still high when compared to countries in Southeast Asia where in 2015 it was 305 / 100,000 KH, this figure decreased slightly compared to the 2012 IDHS. The Maternal Mortality Rate was 359 / 100,000 KH. (SUPAS 2015). The global target that the government wants to achieve through the SDGs for 2015-2030 is 70 / 100,000 KH. Referring to this condition, to achieve the target in reducing AKI is off track, meaning that it takes hard and serious work to achieve it. (Center for data and information of the Indonesian Ministry of Health, 2014)

Based on a report from the Health Office of Central Kalimantan Province in 2016 it was 136 / 100,000 KH and in 2017 there was a decrease to 100 / 100,000 KH, while in 2018 it had increased to 151 / 100,000 KH. (Central Kalimantan Provincial Health Office data) Meanwhile in Kotawaringin Regency West of the distribution of MMR in 2017 there were 116 / 100,000 KH, while in 2018 there was an increase to 214 / 100,000 KH. (Data from the Kotawaringin Barat District Health Office). One of the deaths is caused by preeclampsia.

The results of a preliminary study in April 2019 at the Sultan Imanuddin Pangkalan Bun Hospital, 2017 recorded 181 cases of pregnant women with preeclampsia and in 2018 there were 194 cases of pregnant women with preeclampsia. From the results of interviews with 17 respondents, 9 (52.9%) were at risk for parity, 4 (23.5%) were at risk for age, 4 (23.5%) with other risk factors. Most of the respondents do not understand what they are experiencing at this time, so this can put them at risk of preeclampsia.

The high incidence of preeclampsia is due to several factors. Not only one factor, but many factors that cause preeclampsia (multiple causation). Factors that are often encountered include age <20 years or> 35 years, parity, history of hypertension, multiple pregnancy, obesity. Of all the factors found, it is often difficult to determine which one is the cause and which one is the result (Rozikhan, 2010).

Most of the incidence of preeclampsia can be prevented by avoiding the risk factors that cause preeclampsia include: not getting pregnant at the age of less than 20 years or more than 35 years, reducing the number of births, no history of hypertension, not obesity. Avoid other risk factors that can trigger preeclampsia

*Preeclampsia*is a risk that harms the mother and harms the fetus through the placenta. Therefore, to detect early symptoms of preeclampsia is very necessary, for pregnant women, namely by advising the mother to carry out quality pregnancy checks, namely a minimum of 4 visits, namely 1 time each in the first and second trimester, and 2 times in the third trimester. . And mothers are expected to have a book on maternal and child health as a tool to predict the risk symptoms that occur in pregnant women.

Based on the above background, the authors are interested in conducting research with the title "Analysis of Factors Affecting the Incidence of Preeclampsia in Pregnant Women at Sultan Imanuddin Pangkalan Bun Hospital"

METHOD

The design used in this study refers to a quantitative observational research design with a cross sectional sampling approach

The population in this study were all visits of third trimester pregnant women at the Sultan Imanuddin Pangkalan Bun Kotawaringin Barat Hospital on September 1 - October 31 2019, with 236 pregnant women.

In this study the authors determined a sample of 148 pregnant women in the third trimester

In this study the authors used a probability sampling technique with a simple random sampling approach.

Research variable

1. Indevendent Variable: History of Hypertension, Multiple Pregnancy, Obesity
2. Devenden Variable: Preeclampsia

The location of the research was carried out at the Sultan Imanuddin Pangkalan Bun Hospital, Kotawaringin Barat, Central Kalimantan on September 1 - October 31, 2019.

RESULTS

1. Cross tabulation between history of hypertension and incidence of preeclampsia

Based on table 1 above, it can be seen that most of the respondents with no history of hypertension, no preeclampsia were as many as 87 respondents (58.7%).

Table 1: Cross-tabulation between Respondents' Hypertension History and Preeclampsia at Sultan Imanuddin Pangkalan Bun Hospital from September to October 2019

		Incidence of Preeclamption				Total	
		No		Yes			
		F	%	F	%	F	%
History of Hypertension	No	87	58.7	49	33.1	136	91.9
	Yes	1	0.6	11	7.4	12	8,1
Total		88	59.5	60	40.5	148	100

There is an influence between the history of hypertension and the incidence of Preeclamption (p= 0.000 < 0.05)

2. Cross tabulation between Gemelly and Preeclampsia

Table 2: Cross tabulation between Respondent Gemelly and Preeclampsia at Sultan Imanuddin Pangkalan Bun Hospital from September to October 2019.

		Incidence of Preeclamption				Total	
		No		Yes			
		F	%	F	%	F	%
Gemelly	No	88	59.5	55	37.2	143	96.7
	Yes	0	0	5	3.3	5	3.3
Total		88	59.5	60	40.5	148	100

There is an influence between gemelly and the incidence of Preeclamption (p= 0.006 < 0.05)

Based on table 2 above, it can be seen that most of the respondents who were not gemelly, were not preeclampsia were as many as 88 respondents (59.5%).

3. Cross tabulation between obesity and preeclampsia

Table 3: Cross-tabulation between Respondent Obesity and Preeclampsia at Sultan Imanuddin Pangkalan Bun Regional Hospital from September to October 2019.

		Incidence of Preeclamption				Total	
		No		Yes			
		F	%	F	%	F	%
Obesity	BB Normal	13	8.7	4	2.7	17	11.4
	BB Lebih	56	37.8	16	10.8	72	48.6
	Obesitas	19	12.8	40	27.0	59	39.8
Total		88	59.5	60	40.5	148	100

There is an influence between gemelly and the incidence of Preeclamption (p= 0.000 < 0.05)

Based on table 3 above, it can be seen that most of the respondents who were not obese, not preeclampsia were 69 respondents (46.6%).

B. Analysis of Factors Affecting the Incidence of Preeclampsia at the Sultan Imanuddin Pangkalan Bun Hospital from 1 September to 31 October 2019

Based on table 4. below it is known :

1. Variable History of Hypertension (X1)
   Partially variable X1 (History of Hypertension) affects Variable Y (Preeclampsia Incidence) as much as the effect (Exp.B 131.238) with a value (sig 0.000) <α (0.05) means H1 is accepted and H0 is rejected, so there is an effect of history of hypertension on the incidence of preeclampsia.
2. Variable Gemelly (X2)
   Partially the Gemelly Variable (X2) does not affect the Preeclampsia Incidence variable (Y) the value (Sig. 0.999) is much greater than the value (α> 0.05) means that H1 and H0 are rejected, so there is no effect of Gemelly pregnancy on the incidence of preeclampsia.
3. Obesity Variable (X3)
   Partially the Obesity Variable (X3) affects the Preeclampsia Incidence Variable (Y), the amount (Exp.B 7.405) with a value (Sig. 0.000) <α 0.05) means H1 is accepted, H0 is rejected, so there is an effect of obesity on the incidence of preeclampsia.
4. Simultaneously, the influence of the Hypertension History variable (X1) and the Obesity variable (X3) on the Preeclampsia Incidence (Y) variable was 44.9% (Negelkerke R Square). 55.1% was influenced by other factors not examined.
5. The dominant factor that most influenced the incidence of preeclampsia in Sultan Imanuddin Pangkalan Bun Hospital was a history of hypertension (X1) of (Exp. B 131,238). Because in the history of hypertension there is a disturbance in renal function, increased renal afferent artery resistance and changes in the shape of the glomerular endothelium. Decreased filtration causes creatinine levels to increase, decreased blood flow to the kidneys causes perfusion and renal filtration results in oliguria. Damage to the glomerular blood vessels in the form of endhotelial glomerulo-capilary causes proteinuria. With proteinuria in pregnant women, preeclampsia occurs.

Table 4.Results of logistic regression statistical tests between history of hypertension, Gemelly, obesity and the incidence of preeclampsia at Sultan Imanuddin Pangkalan Bun Hospital from 1 September to 31 October 2019.

Variables	Sig.Simultan	R^2	Sig	Exp (B)
History of Hypertension			0.000	131,238
Gemmely	0,000	0.449	0.999	994261346.1
Obesity			0.000	7,405

DISCUSSION

So that the research results can be used as the findings, the researcher describes the relevant theories that have been carried out by previous researchers in accordance with the research focus, namely "Analysis of Factors Affecting the Incidence of Preeclampsia in pregnant women at Sultan Imanuddin Pangkalan Bun Hospital"

A. The effect of history of hypertension on the incidence of preeclampsia at Sultan Imanuddin Pangkalan Bun Hospital.

Based on the results of research from 148 respondents, data was obtained from 60 respondents (40.5%) who experienced preeclampsia. Among the 60 respondents who experienced preeclampsia there were 4 respondents (2.7%) with age <20 years, 14 respondents (9.4%) primigravida which is one of the factors that can influence the incidence of preeclampsia, but in this study age and parity were not included as research variables. by researchers.

There were 49 respondents (33.1%) who experienced preeclampsia without a history of hypertension, while 11 respondents (7.4%) with a history of hypertension had preeclampsia. By using enter logistic regression analysis, it was obtained p value = 0.000 <α value (0.05), so the hypothesis in this study is that there is an effect of history of hypertension with the incidence of preeclampsia in Sultan Imanuddin Pangkalan Bun H1 Hospital accepted, the magnitude of the influence of history of hypertension on the incidence of preeclampsia is (Exp. B 131,238).

Hypertension is an increase in systolic blood pressure of more than 140 mmHg and diatolic blood pressure of more than 90 mmHg on two measurements with an interval of five minutes in a state of rest / calm. An increase in blood pressure that lasts for a long time (persistent) can cause

damage to the kidneys (kidney failure), heart (coronary heart disease), and brain (causing stroke) if not detected early and receive adequate treatment. Many patients with hypertension have uncontrolled blood pressure and the number continues to increase. Therefore, the participation of all parties, both doctors from various fields of specialization in hypertension, government, private and public is needed so that hypertension can be controlled.

The risk factors for hypertension are age, gender, family history, genetics (risk factors that cannot be changed / controlled), smoking habits, salt consumption, saturated fat consumption, use of waste, alcohol consumption habits, obesity, lack of physical activity, stress, use of estrogen. According to researchers based on the existing theory that a history of hypertension is very influential on the incidence of preeclampsia, all this because some people do not know that someone actually has hypertension but do not know it because it is not accompanied by symptoms or complaints. The results of research conducted by researchers reinforce the existing theory that from a total sample of 148 respondents, 60 respondents with the incidence of preeclampsia were 11 respondents (7). 4% experienced preeclampsia with statistical test results obtained p value (0.000 <0.05), which means there is an effect of history of hypertension on the incidence of preeclampsia. Therefore, it is hoped that health workers will always socialize about health related to hypertension, and it is hoped that the community will always check themselves in relation to their health, especially by measuring blood pressure regularly.

If a pregnant woman with a history of uncontrolled hypertension, it will result in preeclampsia or eclampsia so that it will interfere with the growth and development of the baby in her womb, even this is very dangerous for the health of the mother and child and will have fatal consequences.

B. Effect of Pregnancy Gemelly on the incidence of preeclampsia in mothers pregnant at Sultan Imanuddin Pangkalan Bun Hospital.

Based on the results of research from 148 respondents, 5 respondents (3.3%) had preeclampsia. The analysis showed that there was no effect between Gemelly pregnancy and the incidence of preeclampsia in pregnant women. This is based on the results of the analysis with logistic regression test which obtained p value = 0.999 where the p value> 0.05 then H1 is rejected, which means there is no influence between Gemelly pregnancy and the incidence of preeclampsia in pregnant women.

C. The Effect of Obesity on Preeclampsia at the Sultan Imanuddin Pangkalan Bun Hospital.

From the results of the study of 148 respondents, it was found that 59 respondents (39.8%) were obese. where 19 respondents (12.8%) were not with preeclampsia, while 40 respondents (27.0%) were obese with preeclampsia. The results of the analysis with the logistic regression test of this study found that the obesity variable has a significant value of 0.000 <α (0.05) on the incidence of preeclampsia. This means that there is an influence between obesity and the incidence of preeclampsia. So H1 is accepted and H0 is rejected. The magnitude of the effect of obesity on the incidence of preeclampsia is (Exp. B 7.405).

In a previous study conducted by Caroline et al. (2014) with the title "The Relationship between Obesity in Pregnancy and Preeclampsia" at Prof. Dr. RD Kandou Manado showed the results of the Chi Square test with a significant level of p = 0.013 (<α = 0.05), which means that there is a relationship between obesity and the incidence of preeclampsia. Based on the BMI in this study, the number of respondents who were obese was 59 respondents with a percentage of 39.8%, 19 respondents with a percentage of 12.8% who were obese without preeclampsia, 40 respondents with a percentage of 27.0% who were obese with preeclampsia.

In line with what researchers have done, obese pregnant women have an influence on the incidence of preeclampsia, from the statistical test results obtained a significant p value (0.000 <0.05) which means that there is an influence between obesity and the incidence of preeclampsia. magnitude of influence (Exp B 7.405)

Pregnant women who go to the Sultan Imanuddin Pangkalan Bun Hospital who have a body mass index of> 30 kg are more at risk of developing preeclampsia. To prevent or reduce the incidence of preeclampsia in pregnant women, it is expected that related health workers such as nutritionists, midwives, doctors always socialize about nutrition for pregnant women and how to prepare themselves in planning a healthy pregnancy. If previously the mother was already overweight or

obese to be able to maintain normal weight gain. And health workers must explain how the risks will occur to pregnant women if they are overweight or obese.

D. The dominant factor influencing the incidence of preeclampsia in the Sultan imanuddin Pangkalan Bun Hospital.

Based on data from the research crosstabulation results, of the 148 respondents who experienced the incidence of preeclampsia as many as 60 respondents (40.5%). Simultaneously, the influence of the variable history of hypertension (X1), the variable obesity (X3) on the variable incidence of preeclampsia (Y) was 44.9% (Negelkerke R Square), 55.1% was influenced by other factors not examined. Partially, the variable history of hypertension (X1) has an effect of (Exp.B 131.238), the obesity variable (X3) has an effect of (Exp.B 7.405). It can be concluded that the dominant factor that most influences the incidence of preeclampsia in Sultan Imanuddin Pangkalan Bun Hospital is the variable history of hypertension (X1).

The magnitude of the influence of a history of hypertension (X1) on the incidence of preeclampsia (Y) is in accordance with several theories which say that people with hypertension will experience impaired kidney function so that they are at risk of developing preeclampsia. Preeclampsia is a pregnancy-specific condition characterized by placental dysfunction and a maternal response to systemic inflammation with endothelial activation and coagulation. Preeclampsia is established based on the presence of hypertension and proteinuria at gestational age above 20 weeks.

To reduce the incidence of preeclampsia caused by a history of hypertension and obesity at the Sultan Imanuddin Pangkalan Bun Regional Hospital, it is hoped that respondents with a history of hypertension should routinely control their blood pressure and always follow the instructions recommended by doctors so that blood pressure can be controlled and reduced to normal.

Pregnancy with obesity also affects the incidence of preeclampsia. Here it is hoped that the respondent will be able to lose weight before pregnancy or maintain weight and regulate normal weight gain during pregnancy, to reduce the risk of preeclampsia.

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KOMISI ETIK PENELITIAN KESEHATAN
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INSTITUTE OF HEALTH SCIENCE STRADA INDONESIA

KETERANGAN LOLOS UJI ETIK

DESCRIPTION OF ETHICAL APPROVAL

"ETHICAL APPROVAL"

NOMOR : 2372/KEPK/XI/2020

Komite Etik Penelitian Kesehatan Institut Ilmu Kesehatan STRADA Indonesia dalam upaya melindungi hak asasi dan kesejahteraan subyek penelitian kesehatan, telah mengkaji dengan teliti protokol berjudul :

Health Research Ethics Committee Institute of Health Science STRADA Indonesia in the effort to protect the rights and welfare of research subjects of health, has reviewed carefully the protocol entitled:

"Analysis of Factors that Affect Preeclampsia of Pregnant Women at Sultan Imaniddin Hospital Pangkalan Bun"

Peneliti : Dr. Indasah, Ir.,M.Kes
Investigator

Nama Institusi : Institut Ilmu Kesehatan STRADA Indonesia
Name of Institution

Dan telah menyetujui protokol tersebut di atas.
And approved the above-mentioned protocol.

Kediri, 21 November 2020

KETUA

KOMISI ETIK PENELITIAN KESEHATAN

Mohamad As'ad Efendy, S.Kep.,Ns.,M.Kep.

NIK : 13. 07. 12. 143