PREECLAMPSIA-ECLAMPSIA GRAVIDARUM AND THE DELIVERY OF THE CESAREAN SECTION METHOD

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ABSTRACT

Introduction: Preeclampsia and eclampsia were emergencies, which greatly contribute to maternal mortality. The definitive management for preeclampsia-eclampsia gravidarum was pregnancy termination, which can be done by *the caesarean section* method.
Purpose: To analyze the correlation between preeclampsia-eclampsia gravidarum and the *caesarean section* method at Prof. Dr. H. Aloei Saboe in September to January 2020.
Method: Observational study with *cross-sectional* approaches. The sample used was mothers who gave birth at Prof. Dr. H Aloei Saboe during the period January-September 2020, which fulfilled the criteria of inclusion and exclusion with a total of 66 samples. Data were taken from medical records and analyzed by using the test *Chi-square*, with a significance value of 10%
($\alpha = 0.10$).
Results: Hypothesis testing used *chi-square* method with a level of significance 10% ($\alpha = 0.10$), obtaining the p-value (0.82) ($p > 0.10$).
Conclusion: There was no significant correlation between preeclampsia-eclampsia gravidarum and the delivery of *the Caesarean section* method at Prof. Dr. H. Aloei Saboe January-September 2020 period.

Keyword: Preeclampsia, Eclampsia Gravidarum, Caesarea Section.

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INTRODUCTION

International Society for the Study of Hypertension in Pregnancy (ISSHP) defines preeclampsia as hypertension (systolic blood pressure> 140 mmHg or diastolic blood pressure> 90 mmHg at two measurements with time intervals of 4–6 hours) with a new-onset was occurring after 20 weeks of pregnancy with proteinuria (> 300 mg/day) and maternal organ dysfunction, such as renal insufficiency, liver dysfunction, nervous system disorders, pulmonary oedema, uteroplacental dysfunction, and thrombocytopenia (1). At the same time, eclampsia was a brain injury caused by preeclampsia. Some references said that eclampsia was defined as preeclampsia with the presence of convulsions or coma during the pregnancy or postpartum period. Seizures or coma in eclampsia were not associated with other neurological diseases that can justify a seizure condition (i.e. epilepsy or brain stroke) (2).

Preeclampsia and eclampsia are emergencies, which greatly contribute to maternal mortality. Every day in 2017, 810 mothers worldwide die from diseases or complications related to pregnancy and delivery. The cause of 75% of maternal deaths are caused by hypertension in pregnancy (preeclampsia/eclampsia), bleeding, infection, prolonged labor, and unsafe abortion (3). It was said that hypertension in pregnancy was the second leading cause of maternal death worldwide after bleeding, resulting in 192 maternal deaths per day (2). In the 2018-2019 period, the number of maternal deaths in Indonesia reached 4,226 people, and 1066 died due to hypertension in pregnancy (4). In Gorontalo, pregnancy hypertension contributed to as much as 15.93% of maternal deaths during the 2017-2019 period. According to the statistical data of the Gorontalo health office, it was the main cause of maternal death along with bleeding cases (5).

A caesarean section (SC) is a surgical procedure mostly performed to remove the product of conception through an incision in the abdomen and uterus. This procedure is performed considering the medical indications of the fetus, mother, or both to save them from death. There are two main indications for caesarean section, namely non-medical indications and medical indications. Non-medical indications include education, age, socio-economy, and socio-culture. In comparison, medical indications are generally divided into three categories, namely power, the birth canal (passage), and the fetus (passenger). Most of the common problems faced, which were medical indications for cesarean section, includes fetal distress, prolonged/obstructed labor, major antepartum bleeding (such as in the case of placenta previa and placental abruption), preeclampsia, eclampsia, multiple pregnancies, narrow pelvis, malpresentation and indications for previous cesarean section (6). Since 1985, the international health care community has considered the ideal rate for cesarean section among 10% - 15% (7). However, the average Caesarea Section in the world is 19.1%, which is more than it is supposed to be. In Indonesia, it shows the same situation. According to data from the Indonesian Health Demography Survey (IDHS), women with caesarean sections in Indonesia are increasing. In 2007 the caesarean section rate was 5%. In 2010 it increased to 15.3%; in 2012, it was 12%, and in 2017 it was 16.4% (6).

Based on the above background, this study aimed to analyze the correlation between preeclampsia-eclampsia gravidarum and the caesarean section method at Prof. Dr. H. Aloei Saboe period January-September 2020.

METHOD

This research was an observational analytic study with a cross-sectional study design. Variables consist of independent

and dependent variables. The independent variable delivery re was preeclampsia-eclampsia gravidarum, while the dependent variable was a caesarean section. The population was all mothers who gave birth at Prof. Dr. H. Aloei Saboe during January - September 2020, totalling 188 people. The sample amounted to 66, with sampling used the purposive sampling method. The sample inclusion criteria were patients who gave birth at Prof. hospital. Dr. H. Aloei Saboe Gorontalo during the period January - September 2020 and has a complete medical record. In comparison, the sample exclusion criteria were mothers with PROM and Gemelli. After collecting secondary data from the patient's medical records, the data were then processed by SPSS to saw the correlation between the independent and dependent variables using the hypothesis test chi-square with a significance level of 10% (α = 0.10).

RESULTS

Prof. Regional General Hospital. DR. H Aloei Saboe Gorontalo had 188 patients during the period 1 January to 30 September 2020. Of these, 66 samples that met the inclusion and exclusion criteria were included in this study. Of the 66 samples, 29 were in the preeclampsia-eclampsia gravidarum group, and 37 others were in the non- preeclampsia-eclampsia gravidarum group. The following is a table that shows the frequency distribution of the characteristics of samples in the study.

Table 1. Sample Frequency Distribution (N = 66)

Preeclampsia-Eclampsia Gravidarum (n=29)		
Characteristics	**N**	**%**
Age		
<20 year	2	6,9
20-35 year	20	69,0
>35 year	7	24,1
Parity		
Primigravida	13	44,8
Multigravida	16	55,2
Delivery Age		
Aterm	21	72,4
Preterm	8	27,6
Delivery Method		
Pervaginam	14	48,3
Caesarean section	15	51,7

No Preeclampsia-Eclampsia Gravidarum (n=37)		
Characteristics	**N**	**%**
Age		
<20 year	2	5,4
20-35 year	27	73,0
>35 year	8	21,6
Parity		
Primigravida	12	32,4
Multigravida	25	67,7
Delivery Age		
Aterm	34	91,9
Preterm	3	8,1
Delivery Method		
Pervaginam	20	54,1
Caesarean section	17	45,9

Based sample characteristic frequency distribution table above, we can saw that in a group of preeclampsia-eclampsia gravidarum, majority old between 20-35 years (69.0%), multigravida (55.2%), the age of labor at term (72.4%), Delivery method with caesarean section (51.7%). Whereas in the sample group that did not experience preeclampsia - eclampsia gravidarum, the majority of aged between 20-35 years (73.0%), multigravida (67.7%), a term of delivery (91.9%), vaginal delivery methods (54, 1%).

The data is then tabulated into a table, and calculate the p-value to test the correlation between the independent and dependent variables.

Table 2. Cross Tabulation Between Preeclampsia-Eclampsia Gravidarum And Preterm Labor

	Prematurity				Total		*P-value*
	with SC		without SC				
	N	%	N	%	N	%	
Preeclampsia-Eclampsia gravidarum	15	22,7	14	21,2	29	44,0	
No Preeclampsia-Eclampsia gravidarum	17	25,7	20	30,3	37	56,0	0,82
Total	**32**	**48,4**	**34**	**51,5**	**66**	**100**	

The table above shows that most of the delivery methods used a caesarean section in the sample of the group who experienced preeclampsia-eclampsia gravidarum (15 / 22.7%). Whereas, in the sample group that did not experience preeclampsia-eclampsia gravidarum, most of the delivery methods used non-caesarean section or vaginal methods (20 / 30.3%). Hypothesis testing was carried out using chi-square to saw the correlation between cases of preeclampsia-eclampsia gravidarum and the delivery method with a significance level of 10% (α = 0.10). Based on the results obtained, the value of Continuity Correction obtained p = 0.82 (p> 0.10), so it is said that H0 is accepted. That is, there is no significant correlation between cases of preeclampsia-eclampsia gravidarum and the delivery method at Prof. Dr. H. Aloei Saboe January-September 2020 period.

DISCUSSION

Based on the results of the correlation test with the chi-square calculation, the Continuity Correction value shows p-value = 0.82 (p> 0.10). This proves that the preeclampsia-eclampsia gravidarum and the Caesarean section method at Prof. Dr. H. Aloei Saboe January-September 2020 period do not have a significant correlation.

The results obtained were in line with Pratiwi et al. (2019) research regarding the risk factors that affect the delivery method at the Sitti Khadijah 1 Makassar Mother and Child Hospital. The results showed that the preeclampsia case at RSI Sitti Khadijah 1 Makassar was not associated with the Caesarean section delivery. This study by Pratiwi et al. (2019) used a retrospective cohort approach with a sample size of 925. The bivariate analysis results used the chi-square variable between the variables of preeclampsia and delivery methods showed a p-value of 0.751 (> 0.05), which means that preeclampsia was not associated with the delivery method. According to him, the variables related to the delivery method are the presentation of the fetus and the pregnancy interval (8).

In contrast to the research results by Setiana, et al. (2019), which showed that preeclampsia cases had a significant correlation with the caesarean. The study used a sample of 87, with 34 having preeclampsia and 53 without preeclampsia. Of the 34 samples who had preeclampsia, 24 (70, 6%) underwent cesarean section, and 10 (29, 4) others did not. Whereas 53 samples with no preeclampsia, 22 (41.5%) of them had a cesarean section, and 31 (58.5%) did not. Bivariate analysis used Chi-square with a p-value of 0.015 (α <0.05) shows that there was a significant

correlation between cases of preeclampsia and delivery using the Caesarean section method (9).

In theory, the only definitive treatment for preeclampsia was the termination of pregnancy. To date, there had been no other interventions other than termination of pregnancy, which had shown an improvement in the condition of preeclampsia. (9). This termination of pregnancy was intended to prevent the development of the disease in more emergencies even though the fetus was still in a premature state. It would be fatal if the termination of pregnancy was postponed because it caused the patient to experience eclampsia, and in some cases, the patient will fall into a coma. In addition, there will also be damage to the placenta, causing fetal death. Therefore, to prevent these things, the best way was to terminate the pregnancy. (9, 8). However, careful consideration was needed regarding the timing of the termination—considerations in terms of maternal or fetal risk. For women with preeclampsia without severe symptoms and no other indication for delivery, expectant management with maternal and fetal monitoring was recommended, up to 37 weeks gestation. Such management can only be carried out in health facilities that have adequate maternal and infant intensive care. Whereas, for gestational age of more than 37 weeks, delivery was preferable. In cases of severe preeclampsia and eclampsia, delivery should occur immediately after maternal stabilization regardless of gestational age. Likewise, preeclampsia accompanied by an unstable condition of the mother or fetus, go into labor immediately after maternal stabilization. The method used in pregnancy termination in cases of preeclampsia/eclampsia can be done utilizing a caesarean section (10).

In deciding to perform a caesarean section, it is necessary to consider the medical indications of the mother and the fetus. Maternal medical indications include prolonged/obstructed labor, major antepartum bleeding (as in placenta previa and placental abruption), preeclampsia, eclampsia, narrow pelvis, and previous caesarean section. Whereas fetal medical indications include fetal distress, location abnormalities, and macrosomia. According to research by Pamalingan et al. (2020) (9), the combined factor that affects the occurrence of caesarean section was the most important PEB condition accompanied by fetal distress (9).

In this study, cases of preeclampsia-eclampsia gravidarum did not have a significant correlation with the caesarean section method because not all patients with preeclampsia-eclampsia gravidarum terminated their pregnancies early using the caesarean section method. Perhaps the cases of preeclampsia experienced by most of the samples in this study were preeclampsia without severe symptoms, and there were no signs of maternal or fetal distress, so pregnancy management was carried out with monitoring of the mother and fetus so that it could be maintained until 37 weeks of gestation with vaginal delivery.

CONCLUSIONS

There was no correlation between the cases of preeclampsia-eclampsia gravidarum suffered by mothers during pregnancy with the delivery of the Caesarean section method at Prof. Dr. H. Aloei Saboe Gorontalo January-September 2020 period.

REFERENCES

1. Koullali, B. et al. (2016) 'Risk assessment and management to prevent preterm birth', Seminars in Fetal and Neonatal Medicine, 21(2), pp. 1–9. doi: 10.1016/j.siny.2016.01.005.
2. Peres, G., Mariana, M. and Cairrão, E. (2018) 'Pre-Eclampsia and Eclampsia: An Update on the Pharmacological Treatment Applied in Portugal', Journal of

Cardiovascular Development and Disease, 5(1), p. 3. doi: 10.3390/jcdd5010003.
3. WHO (2019) Maternal Mortality, www.who.int. Available at: https://www.who.int/news-room/fact-sheets/detail/maternal-mortality (Accessed: 19 September 2020).
4. KEMENKES RI (2020) Profil Kesehatan Indonesia Tahun 2019, Kementrian Kesehatan Repoblik Indonesia. doi: 10.1017/CBO9781107415324.004.
5. Dinas Kesehatan Provinsi Gorontalo (2020) Kematian Bayi Provinsi Gorontalo. Gorontalo.
6. Ashar, H. and Kusrini, I. (2020) 'Determinant of the Increased Sectio Caesarea Labor Rates of Indonesia in 2017', Advances in Health Sciences Research, 22, pp. 268–272. doi: 10.2991/ahsr.k.200215.051.
7. WHO (2015) 'WHO Statement on Caesarean Section Rates', The Lancet. doi: 10.1016/S0140-6736(80)91104-6.
8. Williams, P. J. and Broughton Pipkin, F. (2011) 'The genetics of preeclampsia and other hypertensive disorders of pregnancy, Best Practice and Research: Clinical Obstetrics and Gynaecology, 25(4), pp. 405–417. doi: 10.1016/j.bpobgyn.2011.02.007.
9. Pamilangan, E. D., Wantani, J. J. E. and Lumentut, A. M. (2020) 'Indikasi Seksio Sesarea di RSUP Prof. Dr. R. D. Kandou Manado Tahun 2017 dan 2018', e-CliniC, 8(1), pp. 137–144. doi: 10.35790/ecl.8.1.2020.27358.
10. G. Lambert, J. F. brIchant, G. Hartstein, V. Bonhomme, and P. Y. dewandre (2014) 'Preeclampsia : an update', Acta Anæsthesiologica Belgica, 65, pp. 137–149.