

Risk Factor Prevalence of Late Onset Preeclampsia in Dr. Soetomo General Hospital Surabaya

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ABSTRACT

Introduction: Preeclampsia is a condition of hypertension that occurs after 20 weeks of gestation, followed by the detection of protein in the urine sample, and is one of the major causes of maternal mortality. It is categorized, based on time of gestation, into 2-stage are early and late-onset. One of the more accessible tools in diagnosing and also preventing preeclampsia is by its risk factors. The aim of this study was to observe the appearance of some of the risk factors in patients with late-onset preeclampsia and to allow a better approach in patients with said comorbidities.

Methods: This was a descriptive observational study. The sample used was 35 patients diagnosed with late-onset preeclampsia in Dr. Soetomo General Hospital Surabaya from January to December 2016.

Results: Among 35 patients diagnosed with late-onset preeclampsia, obesity (65.71%) appeared the most. Maternal age (37.15%) and primigravida (28.57%) appeared in second and third places. Chronic hypertension appeared only in 6 (17.14%) patients, whereas multiple pregnancies appeared in 3 (8.57%). Both patients with a history of previous preeclampsia and diabetes mellitus only appeared once (2.86%).

Conclusion: Obesity has the most appearance in patients with late-onset preeclampsia, followed by maternal age and primigravida.

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Introduction

Preeclampsia, also known as hypertension in pregnancy, is a condition of increased blood pressure after 20 weeks of gestation. This disorder, in its severe state, may eventually lead to other organ failures. Preeclampsia signs consist of high proteinuria, thrombocytopenia, upper abdomen pain, or severe headache.¹ The criteria of preeclampsia increase blood pressure after 20 weeks of gestation, proteinuria of greater than or equal to 300mg/dL in a 24-hour urine specimen, with the systolic blood pressure of 140 mmHg or diastolic blood pressure of 90mmHg.²

Preeclampsia, based on its onset, can be divided into early and late-onset. Early-onset preeclampsia is defined as increased blood pressure before 34 weeks of gestation.³ Whereas late-onset preeclampsia develops within or after 34 weeks of gestation.⁴

The etiology of preeclampsia is still unknown, and there are only theories used in determining preeclampsia.⁵ The most common theory used is abnormal spiral artery modification. Although there are no specific etiologies of preeclampsia, its risk factors can be used to monitor the possible development of preeclampsia. Some of the known factors of preeclampsia are maternal age,^{6,7} history of preeclampsia,⁸ obesity,^{9,10} primigravida,⁸ chronic hypertension,¹¹ multiple pregnancy⁵ and history of diabetes mellitus.¹²

Methods

This was a descriptive observational study conducted in Dr. Soetomo General Hospital Surabaya. The variables used were risk factors of preeclampsia which consisted of maternal age, history of preeclampsia, obesity, primigravida, chronic hypertension, multiple pregnancies, and diabetes mellitus. The population was all patients diagnosed with preeclampsia in Dr. Soetomo General Hospital Surabaya from January to December 2016. Data were obtained using patients' medical records that had received approval of ethical clearance from the ethics committee of Faculty of Medicine Universitas Airlangga and Dr. Soetomo General Hospital Surabaya. Inclusion criteria were patients with late-onset preeclampsia and had one or more of the risk factors mentioned previously. Exclusion criteria were patients with early-onset preeclampsia, patients without risk factors mentioned, and/or patients with insufficient data. The data obtained were analyzed and presented in the form of a table.

Results

Table 1. Risk factors on patient with late onset preeclampsia

Risk Factors	n = 35
Maternal age	
<18	0 (0%)
>35	13 (37.15%)
History of Preeclampsia	1 (2.86%)
Obesity	23 (65.71%)
Primigravida	10 (28.57%)
Chronic Hypertension	6 (17.14%)
Multiple Pregnancy	3 (8.57%)

As seen from the table, the results revealed that obesity (65.71%) had the most appearance among 35 patients diagnosed with late-onset preeclampsia, followed by maternal age (37.15%). Primigravida (28.57%), chronic hypertension (17.14%), multiple pregnancies (8.57%), history of preeclampsia (2.86%), and history of diabetes mellitus (2.86%) also appeared with less frequency.

Discussion

Obesity is more common in late-onset preeclampsia. A study in Missouri about obesity in preeclampsia patients revealed that 4.1% of them are detected in late-onset preeclampsia, rather than 0.4% of them in early onset.¹³ It is known that in a patient with obesity, a dysfunction in nitrite oxide production is impaired. This leads to vascular endothelial dysfunction.¹⁴ There is a similar result shown in this study.

A study in Reunion Highland suggests that the occurrence of preeclampsia in high-risk gestational age has low relevancy in late or early onset preeclampsia.¹⁵ In comparison, this study's result stated that high-risk gestational age came second in appearance in late-onset preeclampsia. The difference might be caused by the samples collected not exclusively carry single risk factors. The only significant difference in Reunion Highland's study is chronic hypertension which is more related to early-onset preeclampsia. High-risk gestational age is maternal age <18 years old and \geq 35 years old. A study in India shows an increased risk of preeclampsia in pregnant women <20 years old.¹⁶ Although there was no sample in this study that met this age criterion, it can also be kept in mind why pregnant women in those critical ages must be observed intensively. Another study suggests that women aged \geq 40 years old have a two-fold increase in the risk of developing preeclampsia,¹⁷ which is also shown in this study.

These results can be put into consideration in facing patients with said risk factors. Physicians will promote ideal

pregnancy conditions in a certain way that is easier for people to understand and utilize early detection in more of the preventable risk factors that play a role in preeclampsia development.

Conclusion

Obesity as a risk factor appears the most amongst others, followed by maternal age and primigravida. Mothers' lifestyle can cause this, which is known to have contributed to late-onset preeclampsia.

CONFLICT OF INTEREST

The author stated there is no conflict of interest in this study.

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