

ABSTRACT

EFFECT OF METHYLDOPA ON ANGIOGENIC FACTOR of The sFlt-1/ PIGF
RATIO IN PATIENT WITH SEVERE PREECLAMPSIA
(Study at Obstetric and Gynecology Department of Haji Teaching Hospital
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Background - An imbalance in circulating angiogenic factors play a central role in the pathogenesis of preeclampsia. Over the past decade, numerous studies showed that high sFlt-1 and low PIGF are present during preeclampsia women. In addition, increased plasma sFlt-1 and decreased PIGF have been showed to correlate with preeclampsia phenotypes. Using angiogenic factor of the sFlt-1/ PIGF ratio for diagnostic and prognostic tests in preeclampsia is better than using single marker of angiogenic factor. Methyldopa is the first-line drug for hypertension in pregnancy, it is believed to lower blood pressure by direct mechanism on α_2 -adrenoreceptors. A study demonstrated the ability of methyldopa to significantly decrease sFlt-1 level in severe preeclampsia women.

Objective – The aim of this study was to analyze the effect of methyldopa on angiogenic factor of the sFlt-1/ PIGF ratio in severe preeclampsia women.

Methods – This study was a prospective study with time limited sampling, during June to October 2017 period. The protocol of this study was approved by ethical committee of Haji Teaching Hospital Surabaya. The Serum levels of sFlt-1 and PIGF were measured before and after methyldopa therapy, using 250-500 mg for 0-24 hours (before childbirth). sFlt-1/ PIGF ratio were calculated from sFlt-1 and PIGF levels. Immunoassay method was used to analyze the serum levels of sFlt-1 and PIGF biomarkers before and after methyldopa therapy.

Result - 11 patients were included in this study. The results showed that the mean serum levels of sFlt-1/ PIGF ratio were 8147.08 ± 23185.47 pg/ mL before therapy and 453.17 ± 624.9 pg/ mL after methyldopa therapy. The mean serum levels of sFlt-1/ PIGF ratio between before and after treatment decreased 7693.91 pg/ mL ($p > 0.05$). All of patients were grouped in 3 group based on total dose of methyldopa used, i.e 1500, 750 and 500 mg, while the percentage of the decrease in sFlt-1/ PIGF ratio at each group were 97.16 % ($p > 0.05$), 93.04% ($p > 0.05$), and 21.27% ($p > 0.05$), respectively.

Conclusion - There was a decreasing trend in sFlt-1/ PIGF ratio after methyldopa therapy in severe preeclampsia.

Keyword – methyldopa, severe preeclampsia, sFlt-1/ PIGF ratio, angiogenic factors, sFlt-1, PIGF.