

**Perbedaan Kadar *soluble Fms-Like Tyrosine Kinase-1, soluble Endoglin, Placental Growth Factor* antara Preeklamsia Awitan Dini dengan Preeklamsia Awitan Lambat**

**TESIS**



**PROGRAM STUDI S2 ILMU KEBIDANAN  
PASCASARJANA FAKULTAS KEDOKTERAN  
UNIVERSITAS ANDALAS  
PADANG  
2018**

## ABSTRAK

### Perbedaan Kadar *soluble Fms-Like Tyrosine Kinase-1*, *soluble Endoglin*, *Placental Growth Factor* antara Preeklamsia Awitan Dini dengan Preeklamsia Awitan Lambat

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Preeklamsia Awitan Dini (PEAD) adalah preeklamsia yang berkembang sebelum usia kehamilan 34 minggu disebabkan oleh faktor intrinsik, sedangkan Preeklamsia Awitan Lambat (PEAL) adalah preeklamsia yang berkembang setelah usia kehamilan 34 minggu disebabkan oleh faktor ekstrinsik dan maternal. Pengeluaran Faktor-faktor antiangiogenik, metabolik dan faktor inflamasi plasenta dipicu oleh keadaan iskemia plasenta akan menyebabkan terjadinya disfungsi sel endotel. Terjadinya peningkatan produksi faktor antiangiogenik *soluble Fms-Like tyrosine Kinase-1* (sFlt-1), *soluble Endoglin* (sEng) dan penurunan produksi faktor angiogenik *Placental Growth Factor* (PlGF) berkontribusi pada patofisiologi Preeklamsia. Tujuan penelitian ini mengetahui perbedaan kadar sFlt-1, sEng, PlGF antara kehamilan PEAD dengan PEAL.

Penelitian ini bersifat observasional dengan desain *cross sectional*. Penelitian dilakukan di RSUP Dr. M. Djamil, RS TK. III dr. Reksodiwiryo dan Laboratorium Biomedik FK Unand Padang. Waktu penelitian pada bulan Agustus 2017 hingga Agustus 2018. Sampel penelitian ini adalah 26 orang ibu hamil preeklamsia berat yang dikelompokkan berdasarkan 13 orang PEAD dan 13 orang PEAL, diperoleh dengan cara *consecutive sampling*. Kadar sFlt-, sEng, PlGF diperiksa menggunakan metode *Enzyme-linked immunosorbent Assay* (ELISA). Analisa statistik menggunakan uji t tidak berpasangan dan *Mann-Whitney Test*.

Hasil penelitian kadar serum sFlt-1, sEng, PlGF pada PEAD adalah  $9,51 \pm 0,71$  ng/L,  $1,44 \pm 0,06$  ng/mL,  $5,79 \pm 0,42$  ng/mL dan pada PEAL adalah  $8,89 \pm 0,78$  ng/mL,  $1,35 \pm 0,14$  ng/mL,  $6,72 \pm 0,76$  ng/mL. Terdapat perbedaan yang bermakna dengan nilai  $p < 0,05$ .

Kesimpulan penelitian ini adalah kadar sFlt-1 dan sEng lebih tinggi pada PEAD dibandingkan PEAL dan kadar PlGF lebih rendah pada PEAD dibandingkan PEAL.

Kata Kunci: *sFlt-1*, *sEng*, *PlGF*, *PEAD*, *PEAL*

## ABSTRACT

### **Differences in soluble Fms-Like Tyrosine Kinase-1, soluble Endoglin and Placental Growth Factor levels between Early Onset Preeclampsia with Late Onset Preeclampsia**

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Early Onset Preeclampsia (EO-PE), preeclampsia that develops before 34 weeks of gestation, is associated with a invasion of trophoblast and spiral artery remodeling failure whereas Late Onset Preeclampsia (LO-PE), preeclampsia that develops on or after 34 weeks of gestation, is caused by maternal factors. There is an increased production of antiangiogenic factors (sFlt-1 and s-Eng) that may cause systemic endothelial dysfunction, as well as decreased PIGF, which a risk factor for the occurrence of preeclampsia. The purpose of this study was to measure the difference of sFlt-1, sEng, PIGF levels between EO-PE pregnancy and LO-PE.

This was an observational study conducted using a cross sectional design of 26 pregnant women with severe preeclampsia: 13 women with EO-PE and 13 with LO-PE which were selected using consecutive sampling. The study was conducted at Dr. M. Djamil public Hospital, TK Hospital, Dr. Reksodiwiryō tertiary hospital and the FK Biomedical Laboratory of Unand Padang between August 2017 and August 2018. ELISA was used to determine differences in the sFlt-1, sEng, PIGF levels between EO-PE and LO-PE groups. Normality of data was tested using Shapiro-Wilk, analysis of data used an unpaired t test and Mann Whitney Test.

The differences in serum soluble levels of Fms-Like Tyrosine Kinase-1, soluble Endoglin, Placental Growth Factor between EO-PE and LO-PE were  $9.51 \pm 0.71$  ng / mL with  $8.89 \pm 0.78$  ng / mL, respectively. ( $p = 0.045$ ),  $1.44 \pm 0.06$  ng / mL with  $1.35 \pm 0.14$  ng / mL ( $p = 0.048$ ),  $5.79 \pm 0.42$  ng / mL with  $6.72 \pm 0.76$  ng / mL ( $p = 0.001$ ).

It was concluded that there were significant differences in sFlt-1 levels which were higher in EO-PE than LO-PE and in PIGF levels which were lower in EO-PE than LO-PE.

**Keywords: sFlt-1, sEng, PIGF, EO-PE, LO-PE**