

PERBEDAAN ATEROSIS PLASENTA ANTARA PREEKLAMPSIA RINGAN DAN PREEKLAMPSIA BERAT DI RUANG BERSALIN BADAN PELAYANAN KESEHATAN RUMAH SAKIT UMUM DR. WAHIDIN SUDIRO HUSODO MOJOKERTO

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PREECLAMPSIA ;HISTOPATHOLOGY

KKA KK TKR 16/11 Rat p

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RINGKASAN

Preeklampsia merupakan salah satu masalah kesehatan di bidang obstetri selain infeksi dan perdarahan. Preeklampsia merupakan salah satu penyebab meningkatnya morbiditas maupun mortalitas pada ibu dan perinatal. Meskipun demikian penyebab preeklampsia sampai dengan saat ini belum diketahui dengan jelas. Namun telah disepakati bahwa kelainan patofisiologik yang mendasari preeklampsia adalah suatu pengerutan arteriolar yang merata atau vasospasme, sehingga sirkulasi uteroplasenta pada preeklampsia mengalami penurunan aliran darah dan peningkatan resistensi pembuluh darah.

Tujuan penelitian ini adalah untuk membuktikan adanya perbedaan kejadian aterosklerosis plasenta antara preeklampsia ringan dan preeklampsia berat.

Rancangan penelitian ini menggunakan studi observasional analitik dengan melakukan pengamatan sewaktu (cross sectional). Pada penelitian ini dari populasi ibu hamil yang memenuhi kriteria inklusi dan tidak memiliki faktor yang terdapat dalam kriteria eksklusi, dipilih kelompok dengan preeklampsia ringan dan preeklampsia berat. Masing – masing saat persalinan diambil plasentanya dilakukan pemeriksaan histopatologi untuk melihat adanya aterosklerosis pada plasenta. Penelitian dilaksanakan di Ruang bersalin BAPELKES RSUD Dr Wahidin Sudirohusodo Mojokerto, dengan waktu penelitian antara bulan Maret 2008 sampai dengan akhir Juli 2008. Populasi dari penelitian ini adalah wanita hamil dengan komplikasi Preeklampsia berat usia kehamilan lebih dari 20 minggu dan ibu hamil dengan preeklampsia ringan dengan usia kehamilan lebih dari 20 minggu. Pemilihan sampel dilakukan secara consecutive sampling. Cara pengambilan sampel. Pada pasien yang telah terpilih dilakukan pengambilan jaringan plasenta dengan cara memotong plasenta pada bagian parasentral maternal plasenta sekitar 2-6 cm. Jaringan plasenta selanjutnya dimasukkan ke dalam botol berisi Formalin buffer 10%, lalu segera dikirim ke bagian Patologi Anatomi untuk di buat parafin blok, dibuat slide dengan potongan 4 mikron dari parafin blok dan dilakukan pengecatan Haematoxylin Eosin. Selanjutnya plasenta yang mengalami aterosklerosis akut dihitung per sepuluh lapang pandang dengan pembesaran 100 kali. Hasil dibaca / diinterpretasikan oleh ahli patologi anatomi.

Perbedaan aterosklerosis plasenta lapisan fetal pada preeklampsia ringan didasarkan pada uji Mann-PT hitnev yang menunjukkan hasil perhitungan Mean = 4,95, Median= 4(0-14), Standar deviasi= 3,4, pada preeklampsia berat Mean= 8,8, Median= 7(1-19), Standar deviasi= 4,86 dan  $p = 0,003$ , artinya jumlah ATEROSIS plasenta ada sisi fetal pada preeklampsia ringan lebih sedikit dibandingkan dengan jumlah aterosklerosis plasenta pada preeklampsia berat.

Perbedaan aterosclerosis plasenta lapisan tengah pada preeklampsia didasarkan pada uji t-test yang menunjukkan hasil perhitungan Mean = 4,95, Median = 5 ± 3,3. Standar deviasi = 3,3 dan pada preeklampsia berat Mean = 3,3, Median = 7,9 5,3, Standar deviasi = 5,3 dan p = 0,035, artinya jumlah aterosclerosis plasenta ada sisi tengah pada preeklampsia ringan lebih sedikit dibandingkan dengan jumlah aterosclerosis plasenta pada preeklampsia berat. Perbedaan aterosclerosis plasenta lapisan maternal pada preeklampsia ringan didasarkan pada uji t-test yang menunjukkan hasil perhitungan Mean = 4,8, Median = 4,9 ± 3,6, Standar deviasi = 3,6 dan pada PEB Mean = 8, Median = 8 ~ 3,6, Standar deviasi = 3,5 dan p = 0,005, artinya jumlah aterosclerosis plasenta ada sisi maternal pada preeklampsia ringan lebih sedikit dibandingkan dengan jumlah aterosclerosis plasenta pada preeklampsia berat. Total jumlah keseluruhan aterosclerosis plasenta didapatkan hasil pada PER Mean = 14,8, Standar deviasi = 6,9, PEB Mean = 24,7 Standar deviasi = 10,1 dan p = 0,001. Hal ini membuktikan bahwa terdapat perbedaan yang bermakna antara jumlah aterosclerosis plasenta pada preeklampsia ringan dan berat.

Aterosclerosis akut pada plasenta merupakan gejala khas yang terjadi pada janin dari ibu yang menderita preeklampsia. Kondisi ini diduga mempengaruhi terjadinya insufisiensi plasenta. Namun kita hanya dapat memeriksa adanya aterosclerosis akut setelah janin lahir. Dalam hal jumlah aterosclerosis pada plasenta didapatkan perbedaan yang bermakna antara PEB dan PER. Menurut (Robertson, 1975) aterosclerosis akut tampaknya sama dengan gambaran lesi vascular yang terlihat pada penolakan allograf ginjal dan mereka menduga bahwa aterosclerosis adalah hasil minimal merupakan bagian dari delayed type Hypersensitivity dan maternal terhadap antigen fetal. (Poedyo, 2005). Sedangkan menurut (Sudabherata, 2008) aterosclerosis akut terjadi karena kerusakan dari sel endotel arteri spiralis mengakibatkan hipoksia dan seterusnya. Aterosclerosis akut ditandai dengan adanya diskontinuitas dari sel endotel, gangguan fokal pada membrana basalis, deposisi trombosit. terbentuknya mural trombus dan akhirnya terjadi nekrosis. Dengan rangsangan dari trombosit growth factor terjadi perubahan proliferasi yang tidak teratur pada tunika intima, dan pada tunika media mengakibatkan hiperplasia. Aterosclerosis akut ini merupakan keadaan yang terjadi pada preeklampsia. Walaupun aterosclerosis akut ini dapat juga terjadi pada keadaan hipertensi kronis, Diabetes Mellitus. penyakit ginjal maupun Lupus. (Sudabherata, 2008).

## SUMMARY

### DIFFERENCE OF PLACENTAL ATHEROSIS BETWEEN MILD AND SEVERE PREECLAMPSIA IN DELIVERY WARDS, BADAN PELAYANAN KESEHATAN, DR. WAHIDIN SUDIRO HUSODO HOSPITAL, MOJOKERTO

Preeclampsia is one of health problems in obstetrics, in addition to infection and bleeding. Preeclampsia is one of the factors of increased morbidity and mortality in mothers and perinatal. Until recently the causes of preeclampsia remains unclear. However, it has been agreed that pathophysiological abnormality underlies the preeclampsia is an evenly arteriolar shrinkage or vasospasm, so that uteroplacental circulation in preeclampsia has been subjected to reduced blood flow increased blood vessel resistance. The objective of this study was to prove the difference of placental atherosclerosis between mild and severe preeclampsia. This was an analytic observational study with one-time observation (cross-sectional design). In this study, from the population of pregnant mothers who met the inclusion criteria and had no factors presented in the exclusion criteria, those with mild and severe preeclampsia were selected.

During delivery the placenta was removed and subjected to histopathological examination to find the presence of atherosclerosis. The study was conducted at Delivery Wards, BAPELKES, Dr. Wahidin Sudirohusodo, Mojokerto, from March to July 2008. Population comprised mothers who had severe pre-eclampsia complicated pregnancy with pregnancy age of more than 20 weeks, and the mothers who had mild pre-eclampsia complicated pregnancy with pregnancy age also of more than 20 weeks. Samples were taken using consecutive sampling. Placental tissue was taken from selected patients by cutting the placenta at maternal paracentral site as long as 2-6 cm. The placenta was put into a bottle containing 10% formalin buffer, and the preparation was delivered to the Department of Anatomic Pathology for paraffin blocks. Four micron slides were made from those blocks and subjected to Haematoxylin Eosin staining. Furthermore, acute atherosclerotic placenta was counted per ten visual fields in magnification of 100 times. The result was read and interpreted by anatomic pathologists. Based on Mann-Whitney test, there was difference in fetal layer placental atherosclerosis between mild and severe preeclampsia, with a p value of 0.003, indicating that fetal placental atherosclerosis count in mild preeclampsia was lower than that Mean = 4.95, Median = 4 (0-14). Standard deviation = 3.4. in severe preeclampsia Mean = 8.8, Median = 7 (1-19), Standard deviation = 4.86. Using t test. it was found that the difference of middle-layer placental atherosclerosis in mild Mean = 4.95, Median = 5 = 3.3. Standard deviation = 3.3 in severe preeclampsia Mean = 3.3, Median = 7.9 + 5.3, Standard deviation = 5.3 and p = 0.035. indicating that placental atherosclerosis count in the middle-layer in mild preeclampsia was lower than that in severe preeclampsia. t-test also showed that the difference in maternal layer placental atherosclerosis in mild Mean 4.8. Median = 4.9 = 3.6. Standard deviation = 3.6 and severe preeclampsia had Mean 8. Median = 8 3.6. Standard deviation 3.5 and p 0.005. indicating that placental atherosclerosis count in maternal side in mild preeclampsia was lower than that Mean 14.8. Standard deviation = 6.9, in severe preeclampsia Mean 24.7 Standard deviation = 10.1 Total placental atherosclerosis count showed p 0.001. proving that there was significant difference between placental atherosclerosis count in mild and severe preeclampsia.

Acute atherosclerosis in placenta is a typical symptom found in the fetus of a mother who is suffering from preeclampsia. Such condition has been suspected as affecting the occurrence of placental insufficiency. However, we can examine the absence or presence of acute atherosclerosis only after delivery. Pertaining with atherosclerosis count in the placenta, there is significant difference between mild and severe preeclampsia. (Robertson et al. 1975), as quoted in (Poedyo, 2005), wrote that acute atherosclerosis seemed similar to the feature of vascular lesion observed in renal allograft rejection. and they suspected that atherosclerosis was a minimum outcome. a part of maternal and delayed type hypersensitivity against fetal antigens. (Sudebherata, 2008) suggested that atherosclerosis occurred due to the damage of spiral arterial endothelial cells, which resulted in hypoxia, etc. Acute atherosclerosis is marked by discontinuity of endothelial cells, focal disorder of basal membrane. thrombocytosis to deposition, the formation of mural thrombus, and finally, the necrosis. With the stimulation of thrombocyte growth factor, irregular proliferative changes occur in tunica intima, and in tunica media it results in hyperplasia. Such acute atherosclerosis is a condition found in preeclampsia, even though it may also found in chronic hypertension. diabetes mellitus, renal disease. as well as lupus. (Sudabherata, 2008)

## ABSTRACT

**DIFFERENCE OF PLACENTAL ATHEROSIS BETWEEN MILD AND SEVERE PREECLAMPSIA IN DELIVERY WARDS, BADAN PELAYANAN KESEHATAN. DR. WAMDIN SUDIRO HUSODO HOSPITAL, MOJOKERTO**

Preeclampsia one factor of the increased morbidity and mortality in mothers and perinatal. However, until recently the causes of preeclampsia remains unclear. The objective of this study was to prove the difference of placental atherosclerosis between mild and severe preeclampsia. This was an analytic observational study with one-time observation (cross-sectional design). In this study, from the population of pregnant mothers who met the inclusion criteria and had no factors presented in the exclusion criteria, those with mild and severe preeclampsia were selected. During delivery the placenta was removed and subjected to histopathological examination to find the presence of atherosclerosis. The study was conducted at Delivery Wards, BAPELKES, Dr. Wahidin Sudirohusodo, Mojokerto, from March to July 2008. Population comprised mothers who had severe pre-eclampsia complicated pregnancy with pregnancy age of more than 20 weeks, and the mothers who had mild pre-eclampsia complicated pregnancy with pregnancy age also of more than 20 weeks. Samples were taken using consecutive sampling. Data were analyzed with Chi-square test to compare placental atherosclerosis count in severe and mild preeclampsia with significance level of 95% ( $p < 0.05$ ). The result of this study revealed that, based on Mann-Whitney test, there was difference in fetal layer placental atherosclerosis between mild and severe preeclampsia, with a  $p$  value of 0.003, indicating that fetal placental atherosclerosis count in mild preeclampsia was lower than that in severe preeclampsia. Using  $t$  test, it was found that the difference of middle-layer placental atherosclerosis in mild and severe preeclampsia had  $p = 0.035$ , indicating that placental atherosclerosis count in the middle-layer in mild preeclampsia was lower than that in severe preeclampsia.  $T$  test also showed that the difference in maternal layer placental atherosclerosis in mild and severe preeclampsia had  $p = 0.005$ , indicating that placental atherosclerosis count in maternal side in mild preeclampsia was lower than that in severe preeclampsia. Total placental atherosclerosis count showed  $p = 0.001$ , proving that there was significant difference between placental atherosclerosis count in mild and severe preeclampsia. Acute atherosclerosis in placenta is a typical symptom found in the fetus of a mother who is suffering from preeclampsia. Such condition has been suspected as affecting the occurrence of placental insufficiency. This study can be followed-up using cohort prospective design by involving larger sample to investigate causal relationship between atherosclerosis and various complications resulting from preeclampsia.

Keywords: atherosclerosis, mild preeclampsia, severe preeclampsia, histopathology