Hubungan proteinuria yang diukur dengan rasio protein kreatinin urin dengan nilai flow mediated dilation arteri brakialis sebelum dan sesudah melahirkan sebagai penanda disfungsi endotel pada preeklampsia = Correlation between urine protein creatinine ratio and flow mediated dilation of brachial artery before and after delivery as a marker of endothelial dysfunction in preeclampsia

Faisal Habib, author

Abstrak

ABSTRAK
Latar Belakang. Perempuan dengan preeklampsia memiliki resiko tinggi terhadap penyakit kardiovaskuler 5-15 tahun pasca kehamilan. Disfungsi endotel diperkirakan menjadi patogenesis manifestasi klinik preeklampsia dan penghubung antara preeklampsia dan kejadian kardivaskular setelah kehamilan. Nilai flow mediated vasodilation (FMD) dari arteri brakhialis pada sebagian subset preeklampsia tetap rendah 3-10 tahun pasca-melahirkan. Proteinuria pada preeklampsia secara etiologi juga berhubungan dengan disfungsi endotel glomerulus. Namun, tidak seperti pada populasi hipertensi dan diabetes mellitus, sampai saat ini belum diketahui bagaimana korelasi antara nilai proteinuria dengan nilai FMD pada populasi preeklampsia.
Tujuan : Untuk mengetahui hubungan/korelasi antara proteinuria terhadap nilai FMD pada preeklampsia sebelum dan sesudah melahirkan
Metode. Studi prospektif dilakukan di tiga rumah sakit. Subyek preeklampsia yang akan diterminasi dan sesuai kriteria inklusi dan eksklusi diperiksa nilai FMD dan rasio protein-kreatinin urinnya (RPKU) sebelum melahirkan, 48-72 jam setelah melahirkan dan pasca-nifas. Data kemudian diolah dengan analisis bivariat dan multivariat untuk mengetahui korelasi antara rasio protein-kreatinin urin dengan nilai FMD dan perubahannya sebelum dan setelah melahirkan.
Hasil Penelitian. Sebanyak 30 perempuan preeklampsia diikutsertakan dalam penelitian ini. Rerata nilai FMD sebelum melahirkan, 48-72 jam pasca-melahirkan dan follow up pasca-nifas adalah 5.46 ± 0.27 ,, 6.10 ± 0.35 dan 8.14 ± 2.48 (p <0.001). Ditemukan 40 % subyek masih dengan FMD < 7 saat pemeriksaan pasca-nifas (40-60 hari). Uji korelasi bivariat menunjukkan korelasi dengan arah negatif yang kuat antara proteinuria (RPKU) pasca-nifas dengan nilai FMD pascanifas

(r= -0.73, p <0.001) , dan nilai RPKU sebelum melahirkan berhubungan dengan rendahnya FMD pasca-nifas dan perubahan (delta) FMD sebelum-sesudah melahirkan. Tidak diperoleh korelasi bermakna antara proteinuria dan nilai FMD sebelum melahirkan. Analisis multivariat dengan regresi linier membuktikan korelasi yang independen antara proteinuria dan nilai FMD pasca-nifas dan delta

FMD.
Kesimpulan. Studi ini menegaskan korelasi yang kuat yang arahnya negatif antara nilai proteinuria pasca-melahirkan dengan nilai flow mediated dilation pasca melahirkan pada subyek preeklampsi dan semakin tinggi nilai proteinuria sebelum melahirkan berhubungan dengan rendahnya perubahan FMD sebelum dan sesudah melahirkan.
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ABSTRACT
Background. Endothelial dysfunction was associated with both of the predisposition of preeclampsia and the later development of vascular disease. Flow mediated dilation (FMD) was reduced in preeclamptic women and persist after delivery in several cases. Proteinuria in preeclampsia was also a manifestation of endothelial dysfunction in kidney, but there was no data untill now showing the correlation of FMD and the level of proteinuria in preeclamptic woman
Objectives. To asses the correlation between urine protein-creatinine ratio and flow mediated dilation (FMD) before and after delivery in preeclamptic women.
Methods. Women with a diagnosis of preeclampsia and planned for termination were enrolled for the study. History of hypertension before 20 weeks of gestation, diabetes mellitus, chronic kidney disease became exclusion criterias. The FMD was studied through the use of high resolution vascular ultrasound examination of brachial artery for 3 times; before delivery, 48-72 hours after delivery and 40-60 days after delivery. Urine protein-creatinine ratio (UPCR) was measured twice; prior to delivery and 40-60 days after delivery. Correlation between them was then evaluated.
Results. Thirty patients were enrolled in this study. The mean ages was 29.5±6,4 years old. FMD was improved after delivery, 5.46 ± 0.27 % (before delivery) & 8.14 ± 2.48 % (p <0.001) 40-60 days after delivery. Bivariates analysis showed that after delivery, there was an inverse correlation between UPCR with FMD (r=0,735 p< 0,0001). UPCR prior to delivery also has inverse correlation with FMD

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delivery (r= -0.55.p=0.002) and with the change of FMD before and after delivery (r= -0.45 with p =0.01). Multivariate analysis showed that correlation between UPCR after delivery with FMD after delivery was independent. Conclusion. This study demonstrated there was a moderate-strong correlation between urinary protein prior and after delivery with flow mediated vasodilatation of brachial artery after delivery.

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