Analisis 8-ISO-prostaglandin F2 dan kidney injury molecule-1 (kim-1) urin serta hubungannya dengan laju filtrasi glomerulus pada pasien diabetes melitus tipe 2 = Analysis 8-ISO-prostaglandin F2 dan kidney injury molecule-1 (kim- 1) urine and its corelation with glomerular filtration rate of type 2 diabetes mellitus patients

Rindhy Utami Muris, author

Abstrak

Gangguan fungsi ginjal merupakan salah satu komplikasi yang sering terjadi pada pasien diabetes melitus tipe 2. Pendeteksian dini dengan menggunakan senyawa 8-iso-Prostaglandin F2 dan KIM-1 diperlukan untuk mencegah progresifitasnya. Dalam penelitian ini dilakukan analisis hubungan antara kadar 8-iso-Prostaglandin F2 dan KIM-1 urin dengan estimasi laju filtrasi glomerulus (eLFG). Sampel yang dianalisis adalah 40 orang pasien diabetes melitus tipe 2 di Puskesmas Pasar Minggu, dengan teknik total sampling. Nilai eLFG diperoleh berdasarkan nilai kreatinin serum yang diukur menggunakan metode kinetik Jaffe, sedangkan kadar 8-iso-Prostaglandin F2 dan KIM-1 diukur dengan menggunakan metode ELISA (Enzyme Linked Immunosorbent Assay). Kadar 8-iso-Prostaglandin F2 diperoleh 6633,87 ± 1292,62 pg/mg kreatinin, kadar KIM-1 diperoleh 8,23 ± 3,23 ng/mL dan nilai eLFG diperoleh 99,65 ± 41,12 (Cockroft-Gault); 96,59 ± 41,90 (MDRD study); dan 100,79 ± 40,07 (CKD-EPI).
Hubungan antara kadar 8-iso-Prostaglandin F2 dengan nilai eLFG berdasarkan persamaan Cockroft-Gault (r = 0,520; p = 0,001), MDRD (r = 0,477; p = 0,004) dan CKD-EPI (r = 0,403; p = 0,013), serta setelah perokok dieksklusi, berdasarkan ketiga persamaan, yaitu Cockroft-Gault (r = 0,595; p = 0,001), MDRD (r = 0,554; p = 0,003) dan CKD-EPI (r = 0,559; p = 0,003). Hubungan antara kadar KIM-1 dengan nilai eLFG berdasarkan persamaan Cockroft-Gault (r = -0,155; p = 0,339), MDRD (r = -0,173; p =0,285) dan CKD-EPI (r = -0,024; p = 0,883). Sehingga diketahui terdapat hubungan yang bermakna antara kadar 8-iso-Prostaglandin F2 dengan nilai eLFG dan tidak terdapat hubungan yang bermakna antara KIM-1 dengan nilai eLFG.
<hr><i>Renal dysfunction is one of complication that most common in type 2 diabetes mellitus patients. The earlier detection is needed to prevent its progression with 8-iso-Prostaglandin F2 and KIM-1. The aim of this study was to analyze concentration of 8-iso-Prostaglandin F2 and KIM-1urine and its correlation with estimated glomerular filtration rate (eGFR). Samples analyzed were 40 type 2 diabetes mellitus patients at Pasar Minggu Local Government Clinic, used total sampling method.
eGFR was obtained based on the measurement of serum creatinine on kinetic Jaffe method, 8-iso-Prostaglandin F2 and KIM-1 was measured by ELISA (Enzyme Linked Immunosorbent Assay) method. Concentration of 8-iso-Prostaglandin F2 was 6633,87 ± 1292,62 pg/mg creatinine, concentration of KIM-1 was 8,23 ± 3,23 ng/mL and the eGFR values were 99,65 ± 41,12 (Cockroft-Gault); 96,59 ± 41,90 (MDRD study); and 100,79 ± 40,07 (CKD-EPI).
The correlation between 8-iso-Prostaglandin F2 concentration and eGFR is based on Cockroft-Gault (r = 0,520; p = 0,001), MDRD (r = 0,477; p = 0,004) and CKD-EPI (r = 0,403; p = 0,013), and the correlation between 8-iso-Prostaglandin F2 concentration after smoker exclution and eGFR based on Cockroft-Gault (r = 0,595; p = 0,001), MDRD (r = 0,554; p = 0,003) and CKD-EPI (r = 0,559; p = 0,003). But the correlation

between KIM-1 concentration and eGFR based on Cockroft-Gault (r = -0,155; p = 0,339), MDRD (r = -0,173; p =0,285) and CKD-EPI (r = -0,024; p = 0,883). So there was a significant correlation between 8-iso-Prostaglandin F2 concentration and eGFR, and also there were no significant correlation between KIM-1 concentration and eGFR.</i>