

Korelasi antara stadium CKD 1, 2 dan 3 dengan volume parenkim ginjal pada CT scan = Corelation between 1,2, and 3 stages of CKD with parenchymal renal volume on CT scan

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Abstrak

Latar belakang dan tujuan : Persiapan pada calon pasien yang akan menjadi pendonor ginjal memerlukan penilaian fungsi dan anatomi organ ginjal. Korelasi antara fungsi dan anatomi ginjal dapat membantu untuk prediksi fungsi dan anatomi ginjal, oleh karena itu dibutuhkan penilaian rerata volume parenkim ginjal dan pada stadium CKD 1, 2 dan 3 serta korelasi antara volume parenkim ginjal dengan rerata estimasi laju filtrasi glomerulus pada stadium CKD 1, 2 dan 3.

Metode : Penelitian cross sectional ini menggunakan data sekunder berupa nilai estimasi laju filtrasi glomerulus yang dihitung dengan rumus MDRD. Subyek penelitian yang sesuai dengan kriteria dihitung volume parenkim ginjalnya menggunakan CT scan. Teknik pengukuran menggunakan cara disc summation. Korelasi dengan tes pearson digunakan untuk menilai hubungan antara estimasi laju filtrasi glomerulus dengan volume parenkim ginjal.

Hasil : Kelompok CKD stage 1 didapatkan volume rerata parenkim ginjal kanan 132,04 cc, ginjal kiri 134,71 cc dan ginjal total 266,75 cc. Kelompok CKD stage 2 didapatkan rerata parenkim ginjal kiri 112,83 cc, ginjal kanan 110,44 cc dan ginjal total 223,28 cc. Kelompok CKD stage 3 rerata parenkim ginjal kiri 100,21 cc, ginjal kanan 101,4 cc dan ginjal total 201,61 cc. Tes pearson memperlihatkan korelasi yang signifikan ($p < 0,001$) dan kekuatan sedang ($r = 0,554$) dengan persamaan: $y = 0,326x + 16,13$.

Kesimpulan : Korelasi antara nilai estimasi laju filtrasi glomerulus pada CKD stage 1, 2 dan 3 menunjukkan signifikansi kuat dan korelasi sedang dengan persamaan: $y = 0,32x + 16,13$. Persamaan yang didapat berguna untuk estimasi nilai laju filtrasi glomerulus maupun estimasi volume parenkim ginjal total apabila nilai salah satunya diketahui.

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Background and objective : Preparation to a kidney donor will need assessment of the kidney's function and anatomy. The correlation between the function and anatomy can help to predict the function and anatomy. That is why the measurement of kidney's volume is needed (in average and in CKD stage 1, 2, and 3) and the correlation between kidneys parenchyme volume and the average estimated glomerulus filtration rate during CKD stage 1,2, and 3.

Method : Cross sectional research using secondary data of estimated glomerulus filtration rate, calculated by MDRD formula. Kidneys parenchyme volume of the subjects were measured using CT scan. Disc summation technique was applied for the measurement. Correlation with Pearson test was made to assesst the correlation between estimated glomerulus filtration rate and kidneys parenchyme volume.

Result : Group of CKD stage 1 had an average kidneys parenchyme volume 134,71 cc (left), 132,04 cc (right), and 266,75 cc (total). Group of CKD stage 2 had an average kidneys' parenchyme volume 112,83 cc (left), 110,44 cc (right), and 223,28 cc (total). Group of CKD stage 3 had an average kidney's parenchyme volume 100,21 cc (left), 101,4 cc (right), 201,61 cc (total). Pearson test shows a significant correlation ($p < 0,001$) and moderate strength ($r = 0,554$) with the equation $y = 0,326x + 16,13$.

Conclusion : Correlation between estimated glomerulus filtration rate in CKD stage 1, 2, and 3 showed strong significancy and moderate correlation with the equation $y = 0,326x + 16,13$. This equation can be useful to estimate glomerulus filtration rate and total kidneys' parenchyme volume if one of the number is known.