

Korelasi Rasio Asymmetric Dimethylarginine dan Symmetric Dimethylarginine dengan Malnutrition Inflammation Score pada Pasien Hemodialisis Kronik di RS Cipto Mangunkusumo Jakarta = Correlation of Asymmetric Dimethylarginine and Symmetric Dimethylarginine Ratio and Malnutrition Inflammation Score in Chronic Hemodialysis Patients in Cipto Mangunkusumo Hospital Jakarta

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Abstrak

Latar Belakang: Angka kematian pasien penyakit ginjal tahap akhir (PGTA) akibat penyakit kardiovaskular (PKV) sangat tinggi, khususnya pada pasien hemodialisis kronik (HDK), PKV juga dipengaruhi oleh kondisi malnutrisi dan inflamasi. Malnutrition Inflammation Score (MIS) dipakai sebagai prediktor morbiditas dan mortalitas pasien HDK. Asymmetric dimethylarginine (ADMA) dan symmetric dimethylarginine (SDMA) adalah hasil dari proteolisis protein termetilasi yang merupakan penanda inflamasi dan malnutrisi dan ditemukan meningkat pada pasien hemodialisis.

Tujuan: Mencari korelasi rasio ADMA/SDMA terhadap MIS pada pasien Penyakit ginjal kronik (PGK) yang menjalani HDK 2x seminggu.

Metode: Penelitian dengan desain potong lintang yang dikerjakan pada bulan Juli 2022 pada pasien HDK > 3 bulan. Kadar ADMA, SDMA, dan MIS diambil dan dicatat saat sebelum pasien memulai sesi hemodialisis. Analisis bivariat dilakukan dengan analisis Spearman dan Mann – Whitney dan analisis multivariat dengan regresi linier.

Hasil: Sebanyak 23 sampel adalah laki-laki (48,9%) dengan rerata usia 51,2 tahun. Median Albumin adalah 4,0 g/dl dan median TIBC adalah 220 mcg/dl. Median ADMA adalah 82ng/ml, median SDMA 599 ng/ml, rasio ADMA/SDMA 0,14, dan skor MIS 4 (3-6). Skor MIS >5 adalah sebesar 34% dengan <5 sebesar 66%. Dalam analisis bivariat dan multivariat setelah dikontrol penggunaan penghambat ACE, tidak ditemukan hubungan antara rasio ADMA/SDMA dengan MIS ($p=0,154$).

Simpulan: Tidak ditemukan korelasi antara rasio ADMA/SDMA terhadap MIS pada pasien PGK yang menjalani HDK 2x seminggu.

.....Background: The mortality rate of patients with end stage kidney disease (ESKD) due to cardiovascular disease (CVD) is very high, especially in chronic hemodialysis (HD) patients. CVD is also affected by malnutrition and inflammatory conditions. Malnutrition Inflammation Score (MIS) is used as a predictor of morbidity and mortality in HD patients. Asymmetric dimethylarginine (ADMA) and symmetric dimethylarginine (SDMA) are the results of proteolysis of methylated proteins which are markers of inflammation and malnutrition and are found to be increased in hemodialysis patients.

Objective: To find a correlation between the ratio of ADMA/SDMA to MIS in chronic kidney disease (CKD) patients who underwent HD 2x a week.

Methods: A cross-sectional study conducted in July 2022 in HD patients > 3 months. ADMA, SDMA, and MIS levels were taken and recorded before the patient started the hemodialysis session. Bivariate analysis was performed using Spearman and Mann-Whitney analysis and multivariate analysis using linear regression.

Results: A total of 23 samples were male (48.9%) with an average age of 51.2 years. The median Albumin is 4.0 g/dl and the median TIBC is 220 mcg/dl. The median ADMA was 82 ng/ml, the median SDMA was 599 ng/ml, the ADMA/SDMA ratio was 0.14, and the MIS score was 4 (3-6). MIS score > 5 is 34% with < 5 is 66%. In bivariate and multivariate analysis after adjusted for the use of ACE inhibitors, no relations were found between the ADMA/SDMA ratio and MIS (p=0.154).

Conclusion: No correlation was found between the ratio of ADMA/SDMA to MIS in CKD patients who underwent HD 2x a week.