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PERBEDAAN KADAR PROENKEPHALIN A BERDASARKAN DERAJAT *ACUTE KIDNEY INJURY* PADA *SEPSIS ASSOCIATED-ACUTE KIDNEY INJURY*

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ABSTRAK

Latar Belakang: *Sepsis associated-acute kidney injury* (SA-AKI) merupakan komplikasi sepsis yang sering terjadi dan berkontribusi terhadap morbiditas dan mortalitas yang tinggi. Deteksi dini dan penilaian keparahan *acute kidney injury* (AKI) pada pasien sepsis menjadi krusial untuk intervensi yang tepat, namun biomarker konvensional memiliki keterbatasan. Proenkephalin A adalah biomarker potensial untuk diagnosis AKI dan penilaian derajat keparahan. Penelitian ini bertujuan untuk menganalisis perbedaan kadar Proenkephalin A berdasarkan derajat AKI pada pasien dengan SA-AKI.
Metode: Penelitian ini merupakan penelitian analitik dengan rancangan potong lintang terhadap 125 subjek penelitian dirawat di ruang HCU Penyakit Dalam dan ICU RSUP Dr. M Djamil dari bulan Juni-November 2025. Pemeriksaan Proenkephalin A menggunakan metode *flourescence immunoassay*. Derajat AKI berdasarkan kriteria AKI dari KDIGO. Data univariat disajikan dalam bentuk median (minimun-maksimum) dan distribusi frekuensi. Data bivariat dianalisis dengan uji *Kruskal-Wallis* dilanjutkan uji *post hoc Dunn* untuk menilai perbedaan kadar Proenkephalin A berdasarkan derajat AKI.
Hasil: Median usia subjek penelitian adalah 61 tahun. Proporsi subjek dominasi laki-laki (52%). Subjek penelitian sebagian besar mengalami syok sepsis (59,2%). Sebagian besar pasien dengan *early* SA-AKI (88,0%). Kelompok derajat AKI terbanyak pada AKI derajat 1 (36%), derajat 2 dan 3 jumlah sama (32%). Median kadar laktat adalah 2,3 mmol/L. Median skor SOFA adalah 8. Median kadar Proenkephalin A pada AKI derajat 1, derajat 2, dan derajat 3 masing-masing 74,5 pmol/L, 169,6 pmol/L, dan 391,0 pmol/L. Hasil uji didapatkan perbedaan bermakna ($p<0,001$) kadar Proenkephalin A berdasarkan derajat AKI.
Simpulan: Terdapat perbedaan bermakna kadar Proenkephalin A berdasarkan derajat AKI pada SA-AKI dengan AKI derajat 3 yang lebih tinggi dari derajat 1 dan 2. Kadar Proenkephalin A dapat menggambarkan keparahan AKI berdasarkan derajat AKI pada pasien SA-AKI.

Kata Kunci : Proenkephalin A, derajat *acute kidney injury*, *sepsis asscociated-acute kidney injury*

DIFFERENCES IN PROENKEPHALIN A LEVELS BASED ON ACUTE KIDNEY INJURY SEVERITY IN SEPSIS ASSOCIATED-ACUTE KIDNEY INJURY

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Background: *Sepsis associated-acute kidney injury (SA-AKI) is a frequent complication of sepsis and contributes to high morbidity and mortality. Early detection and assessment in the severity of acute kidney injury (AKI) for sepsis patients is crucial, but conventional biomarkers have limitations. Proenkephalin A is a potential biomarker for diagnosis and severity assessment of AKI. This study aims to analyze difference in Proenkephalin A levels based on the AKI severity in SA-AKI.*
Methods: *This was an analytical study with a cross-sectional design on 125 SA-AKI patients treated in Internal Medicine HCU and ICU at M. Djamil Hospital from June-November 2025. Plasma Proenkephalin A was examined using flourescence immunoassay. The severity of AKI criteria from KDIGO. Univariate data was presented in median (min-max) and frequency distribution. Bivariate data was analyzed using the Kruskal-Wallis test followed by the Dunn test to assess the difference in Proenkephalin A levels based on AKI severity***.**
Results: *Median age of subjects is 61 years. Most were male (52%). Most SA-AKI patients experienced septic shock (59.2%). The majority of patients had early SA-AKI (88.0%). The highest AKI group was AKI grade 1 (36%), while grades 2 and 3 were the same (32%). The median lactate level was 2.3 mmol/L. The median SOFA score in subjects was 8. Median Proenkephalin A levels in grade 1, 2, and 3 AKI were 74.5 pmol/L, 169.6 pmol/L, and 391.0 pmol/L, respectively. The results of Kruskal-Wallis test showed a significant difference ($p<0.001$) in Proenkephalin A levels based on the AKI severity.*
Conclusion: *There was a significant difference in Proenkephalin A levels based on AKI severity in SA-AKI patients, with AKI grade 3 having higher levels than grades 1 and 2. Proenkephalin A levels can reflect the severity of AKI based on AKI grade in SA-AKI patients..*

Keywords **:** *Proenkephalin A, acute kidney injury severity, sepsis asscociated-acute kidney injury*