

HUBUNGAN KADAR HEPARANASE DENGAN PARAMETER TROMBOSIT DAN KADAR ALBUMIN PADA PASIEN SEPSIS

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ABSTRAK

PENDAHULUAN : Sepsis adalah kondisi ketika sistem kekebalan tubuh bereaksi secara berlebihan terhadap infeksi. Kondisi inflamasi yang meningkat pada pasien sepsis dipengaruhi oleh kadar heparanase (HPSE). Trombosit ikut berperan pada sepsis sebagai respon terhadap patogen melalui aktivasi kaskade koagulasi. Kadar albumin menunjukkan adanya penurunan fungsi hati dan kebocoran plasma pada kondisi sepsis.

TUJUAN : Membuktikan hubungan antara kadar HPSE dengan parameter trombosit dan kadar albumin pada pasien sepsis

METODE : Penelitian belah lintang dilakukan terhadap 61 pasien sepsis dengan skor SOFA lebih dari 2 dan usia > 20 tahun. Kadar heparanase diperiksa menggunakan *enzyme link immunoassay* (ELISA). Jumlah trombosit, nilai *mean platelet volume* (MPV), dan nilai *platelet distribution width* (PDW) diperiksa dengan metode *impedance*. Kadar albumin serum yang diperiksa dengan metode *bromocresol green* (BCG). Analisis statistik menggunakan uji korelasi *Pearson* ($p < 0,05$).

HASIL : Hubungan kadar HPSE dengan nilai MPV ($r = 0,391$ dan $p = 0,002$), dengan nilai PDW ($r = 0,349$ dan $p = 0,006$), dengan jumlah trombosit ($r = -0,334$ dan $p = 0,009$), dan dengan kadar albumin ($r = -0,358$ dan $p = 0,005$).

SIMPULAN : Uji korelasi mendapatkan hubungan positif lemah antara kadar HPSE dengan nilai MPV dan kadar HPSE dengan nilai PDW. Hubungan negatif lemah antara kadar HPSE dengan jumlah trombosit dan kadar HPSE dengan kadar albumin.

Kata kunci : Sepsis, Heparanase (HPSE), Trombosit, MPV (*Mean Platelet Volume*), PDW (*Platelet Distribution Width*), dan Albumin

CORRELATION OF HEPARANASE LEVELS WITH PLATELET PARAMETERS AND ALBUMIN LEVELS IN SEPSIS PATIENTS

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ABSTRACT

BACKGROUND : Sepsis is a condition occurred when the body's immune system overreacts to infection. Heparanase (HPSE) levels influence the increased inflammatory condition in sepsis patients. Platelets participate in sepsis in response to pathogens by activating the coagulation cascade. Albumin levels indicate decreased liver function and plasma leakage in sepsis.

OBJECTIVE : Our study aimed to establish a link between the level of heparanase, platelet parameters, and the level of albumin in the blood of sepsis patients.

METHODS : A cross-sectional study was conducted on 61 sepsis patients with a SOFA score of more than 2 and aged more than 20 years. Heparanase levels were assessed using enzyme-linked immunoassay (ELISA). Platelet count, mean platelet volume (MPV) value, and platelet distribution width (PDW) value were determined using the impedance method. Serum albumin levels were measured using the bromocresol green (BCG) method. The statistical analysis employed the Pearson correlation test ($p < 0.05$).

RESULTS : Correlation test between HPSE levels with MPV values ($r = 0.391$ and $p = 0.002$), with PDW values ($r = 0.349$ and $p = 0.006$), with platelet counts ($r = -0.334$ and $p = 0.009$), and with albumin levels ($r = -0.358$ and $p = 0.005$)

CONCLUSION : The correlation test showed that there is a weak positive correlation between HPSE levels with MPV values and PDW values. The test showed that there were weak negative correlation between HPSE levels with platelet counts and albumin levels.

Keyword: Sepsis, Heparanase (HPSE), Platelet, MPV (Mean Platelet Volume), PDW (Platelet Distribution Width) value, and albumin level