

**Latar Belakang:** Sepsis masih merupakan masalah besar dunia kesehatan. *Surviving Sepsis Campaign* merekomendasikan penggunaan prokalsitonin sebagai salah satu acuan untuk membantu menegakkan diagnosis infeksi sistemik akut, melihat resolusi infeksi, eskalasi dan penghentian terapi antibiotik pada pasien sepsis. Sayangnya pemeriksaan prokalsitonin sangat mahal dan belum tersedia di seluruh rumah sakit. Diperlukan alternatif penanda biologis selain prokalsitonin. Angka hitung jenis leukosit diketahui mempunyai korelasi dengan kadar prokalsitonin.

**Tujuan:** mengetahui korelasi antara kadar prokalsitonin dengan angka hitung jenis leukosit pada pasien sepsis bakterial yang dirawat di ruang rawat intensif RSUP Dr. Sardjito Yogyakarta

**Metode:** penelitian ini menggunakan rancangan retrospektif korelasional potong lintang yang mengikutsertakan semua pasien dengan diagnosis sepsis bakterial yang dirawat di ruang ICU RSUP dr Sardjito pada 01 januari-31 desember tahun 2019. Data 436 pemeriksaan laboratorium diperoleh dari 104 rekam medis pasien, lalu diolah dengan SPSS versi 26 untuk mencari korelasi antara prokalsitonin dengan masing-masing komponen angka hitung jenis leukosit, dilanjutkan analisis regresi antara prokalsitonin dengan seluruh angka hitung jenis leukosit secara bersama.

**Hasil:** penulis menemukan korelasi positif yang sangat kuat ( $R^2 = 0,823$ ,  $p < 0,05$ ) dari analisis multivariat antara kadar prokalsitonin dengan hitung jenis leukosit. Dari analisis bivariat, terdapat korelasi positif yang cukup antara prokalsitonin dengan leukosit ( $r = 0,279$ ,  $p < 0,05$ ) dan monosit absolut ( $r = 0,254$ ,  $p > 0,05$ ). Didapatkan pula korelasi positif yang sangat lemah antara prokalsitonin dengan neutrofil absolut ( $r = 0,239$ ,  $p < 0,05$ ), neutrofil persentase ( $r = 0,078$ ,  $p < 0,05$ ), eosinofil absolut ( $r = 0,148$ ,  $p < 0,05$ ), eosinofil persentase ( $r = 0,104$ ,  $p < 0,05$ ), basofil absolut ( $r = 0,029$ ,  $p > 0,05$ ), basofil persentase ( $r = 0,011$ ,  $p > 0,05$ ), limfosit absolut ( $r = 0,121$ ,  $p > 0,05$ ), limfosit persentase ( $r = 0,074$ ,  $p > 0,05$ ), monosit persentase ( $r = 0,208$ ,  $p > 0,05$ ), granulosit immatur absolut ( $r = 0,064$ ,  $p < 0,05$ ), dan granulosit immatur persentase ( $r = 0,029$ ,  $p > 0,05$ ).

**Kesimpulan:** terdapat korelasi positif kuat antara kadar prokalsitonin dengan angka leukosit pada pasien sepsis bakterial yang dirawat di ruang rawat intensif RSUP Dr. Sardjito Yogyakarta

**Kata kunci:** sepsis, infeksi bakterial, prokalsitonin, hitung jenis leukosit

**Background:** Sepsis is still a major health problem in the world. The Surviving Sepsis Campaign recommend use procalcitonin as a preference to help diagnose acute systemic infections, infection resolution, escalation and discontinue of antibiotic therapy on sepsis patients. Unfortunately procalcitonin testing is very expensive and not yet available in all hospitals. Alternative biological markers are needed besides procalcitonin. The component of differentiated leukocyte count are known to be correlated with procalcitonin.

**Objective:** to determine the correlation between procalcitonin values and differentiated leukocyte counts in bacterial sepsis patients treated in Dr. Sardjito General Hospital, Yogyakarta intensive care unit.

**Methods:** this study designed was cross-sectional retrospective and include all bacterial sepsis patients that have been treated in the Dr. Sardjito General Hospital ICU between 01 January - 31 December 2019. Data of 436 laboratory examinations have been collected from 104 patient's medical record, then processed with SPSS version 26 to look for correlations between procalcitonin with each component of leukocyte count value, followed by regression analysis between procalcitonin and leukocyte count values.

**Results:** we found very strong positive correlation ( $R^2 = 0.823$ ,  $p < 0.05$ ) in multivariate analysis between procalcitonin levels and differential leucocyte count. There were moderate positive correlation in bivariate correlation between procalcitonin and leucocytes ( $r = 0.279$ ,  $p < 0.05$ ) and absolute monocytes ( $r = 0.254$ ,  $p > 0.05$ ). There were also very weak positive correlation between procalcitonin and absolute neutrophils ( $r = 0.239$ ,  $p < 0.05$ ), percentage neutrophils ( $r = 0.078$ ,  $p < 0.05$ ), absolute eosinophils ( $r = 0.148$ ,  $p < 0.05$ ), percentage eosinophils ( $r = 0.104$ ,  $p < 0.05$ ), absolute basophils ( $r = 0.029$ ,  $p > 0.05$ ), percentage basophils ( $r = 0.011$ ,  $p > 0.05$ ), absolute lymphocytes ( $r = 0.121$ ,  $p > 0.05$ ), lymphocyte percentage ( $r = 0.074$ ,  $p > 0.05$ ), monocyte percentage ( $r = 0.208$ ,  $p > 0.05$ ), absolute immature granulocytes ( $r = 0.064$ ,  $p < 0.05$ ), and percentage immature granulocytes ( $r = 0.029$ ,  $p > 0.05$ ).

**Conclusion:** There was strong positive correlation between procalcitonin levels and leukocyte count in bacterial sepsis patients treated in Dr. Sardjito General Hospital, Yogyakarta intensive care unit

**Keywords:** sepsis, bacterial infection, procalcitonin, differential leukocyte count