Uji Diagnostik Interleukin-6, Prokalsitonin, dan C-Reactive Protein Sebagai Penanda Awal Bakteremia pada Pasien Leukemia Akut Dewasa yang Mengalami Neutropenia Berat Selama Menjalani Kemoterapi Standar di Rumah Sakit Tersier di Jakarta = Interleukin-6, Procalcitonin and C-Reactive Protein as Early Markers of Bacteremia in Adult Acute Leukemia Patients With Severe Neutropenia During Standard Chemotherapy at a Tertiary Hospital in Jakarta

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Abstrak

Identifikasi IL-6, PCT, dan CRP dalam mendiagnosis awal bakteremia pada pasien leukemia akut dengan demam neutropenia banyak dilakukan. Tujuan studi ini mengetahui performa diagnostik delta IL-6, delta PCT, dan delta CRP sebagai penanda awal kejadian bakteremia pada pasien leukemia akut dewasa dengan neutropenia berat selama menjalani kemoterapi standar (agresif). Desain studi ini potong lintang dengan mengambil semua pasien leukemia akut dewasa yang mengalami neutropenia berat selama menjalani kemoterapi agresif di RS Cipto Mangunkusumo dan RS Kanker Dharmais sejak 9 Agt – 9 Nov 2023. Sampel darah IL-6, PCT dan CRP diambil sebelum mulai kemoterapi dan dalam 24 jam saat mulai mengalami neutropenia berat serta kultur darah aerob volume 40cc dalam 24 jam sejak neutropenia berat. Performa diagnostik delta IL-6, delta PCT, dan delta CRP lemah dan tidak berbeda bermakna sebagai penanda bakteremia dengan AUC 0,6703 (IK95% 0,507-0,833); 0,6821 (IK 95% 0,521-0,844); dan 0,694 (IK 95% 0,532-0,856) serta nilai p=0,9681. Prevalensi bakteremia pada studi ini 64,44% (29/45) dengan bakteri gram positif 77,42% (24/31) dan yang terbanyak ialah Staphylococcus Epidermidis 41,67% (10/24). Walaupun performa diagnostik ketiganya lemah, delta CRP dapat dipertimbangkan digunakan dengan mempertimbangkan biaya dan ketersediaan reagen.

.....IL-6, PCT, and CRP test were often performed in acute leukemia patients with febrile neutropenia as early markers of bacteremia. Our objective was to determine the diagnostic performance of delta IL-6, delta PCT, and delta CRP as early markers of bacteremia in adult acute leukemia patients with severe neutropenia during standard/aggressive chemotherapy. This research was conducted using cross-sectional design by taking all of adult acute leukemia patients with severe neutropenia during aggressive chemotherapy at Cipto Mangunkusumo Hospital and Dharmais Hospital from 9 Aug – 9 Nov 2023. IL-6, PCT and CRP blood samples were taken before starting chemotherapy and within 24 hours of starting to experience severe neutropenia as well as blood cultures aerobic volume 40cc. The diagnostic performance of delta IL-6, delta PCT, and delta CRP were weak and didn’t differ significantly as early markers of bacteremia (p = 0.968) with an AUC of 0.6703 (95% CI 0.507-0.833); 0.6821 (95% CI 0.521-0.844); and 0.694 (95% CI 0.532-0.856). Bacteremia was found in 64.44% (29/45), mostly gram-positive bacteria (77.42%) and Staphylococcus epidermidis 41.67%. Although the diagnostic performance of all three markers were weak, delta CRP can be considered as an early marker regarding the cost and availability of reagents.