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Faktor Risiko Pasien Bakteremia Escherichia coli Penghasil Extended-Spectrum Beta-Lactamase di Rumah Sakit Rujukan Jakarta = Risk Factors in Bacteremia Patients with Extended-Spectrum Beta-Lactamase-producing Escherichia coli at Referral Hospital in Jakarta

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Abstrak

Latar belakang. Bakteremia yang disebabkan oleh kuman resisten antibiotik Escherichia coli (E. coli) penghasil Extended-Spectrum Beta-Lactamase (ESBL) dipengaruhi beberapa faktor risiko. Kondisi ini dapat berlanjut menjadi sepsis yang dapat meningkatkan tingginya morbiditas dan mortalitas. Prevalensi bakteremia yang disebabkan E. coli penghasil ESBL cukup tinggi mencapai 57,7%. Pentingnya melakukan penelitian untuk mengevaluasi faktor risiko pada terjadinya bakteremia E. coli penghasil ESBL yang dapat menyebabkan tingginya biaya perawatan dan penggunaan antibiotik yang tidak sesuai di awal sebagai antisipasi terhadap kejadian mortalitas. Penelitian ini bertujuan mengidentifikasi faktor risiko bakteremia E. coli penghasil ESBL dan menentukan faktor risiko terhadap mortalitas.

Metode. Penelitian kohort retrospektif menggunakan data rekam medis pasien kultur darah positif E. coli yang di rawat pada dua Rumah Sakit Rujukan di Jakarta yaitu Rumah Sakit Umum Pusat Nasional (RSUPN) Dr. Cipto Mangunkusumo dan Rumah Sakit Umum Pusat (RSUP) Persahabatan periode Januari sampai Desember 2019. Faktor risiko terjadinya ESBL yang dicari sesuai dengan kepustakaan adalah usia, komorbiditas berdasarkan indeks Charlson, pemakaian alat medis, riwayat terapi antibiotik dan riwayat perawatan sebelumnya serta faktor risiko terhadap mortalitas. Uji bivariat perbedaan dua kelompok kategorik (Chi-square atau Fisher) dan uji regresi logistik multivariat dilakukan untuk menentukan faktor yang berpengaruh terhadap bakteremia ESBL dan mortalitas.

Hasil. Total 116 subjek dalam kurun waktu penelitian dengan usia 18 tahun sebanyak 81% subjek, didominasi 52,6% berjenis kelamin laki-laki. Sumber lokasi infeksi terbanyak berasal dari saluran cerna dan intra abdomen yang ditemukan pada 43 subjek (37,1%) dan sebanyak 54 subjek (46,6%) memiliki komorbiditas keganasan. Faktor risiko yang bermakna secara statistik pada seluruh subjek adalah riwayat terapi antibiotik (adjusted OR 2,78; IK95% 1,20–6,45; p=0,017) dan pemakaian alat medis (adjusted OR 3,21; IK95% 1,10–9,34; p=0,033), sementara pada pasien 18 tahun (94 subjek) hanya faktor riwayat terapi antibiotik yang bermakna (adjusted OR 2,77; IK95% 1,13 – 6,81; p= 0,027). Tidak terdapat perbedaan mortalitas antara bakteremia E.coli penghasil ESBL dan non-ESBL (p=0,059). Proporsi mortalitas bakteremia E. coli penghasil ESBL adalah 55,7% dan faktor risiko mortalitas yang bermakna adalah usia (adjusted OR 15,0; IK95% 1,54–146,0; p=0,020) dan sepsis (adjusted OR 6,5; IK95% 1,91–22,16; p=0,003).

Simpulan. Faktor risiko terjadinya bakteremia E. coli penghasil ESBL adalah riwayat terapi antibiotik dan pemakaian alat medis. Lebih dari separuh pasien mengalami mortalitas dan faktor risiko yang berhubungan adalah usia dan sepsis.

.....Background. Bacteremia caused by the Extended-Spectrum Beta-Lactamase (ESBL)-producing Escherichia coli (E. coli) causing septicaemia and lead to high morbidity and mortality. Factors to ESBL bacteremia are important to recognize soon as patient admitted to hospital since the prevalence of ESBL bacteremia is as high as 57,7% among admitted patient to hospital. The understanding of the risk factors ESBL-producing E. coli bacteremia give the opportunity to provide costs effective treatment costs and antibiotics use to save the lives. This study aims to identify and analyze the risk factor in bacteremia patients with ESBL producing E. coli and its mortality.

Methods. A retrospective cohort study based on medical record data on all patients with a confirmed positive E. coli blood culture examinations were collected from January to December 2019 at two referral hospital in Jakarta, Cipto Mangunkusumo National Hospital and Persahabatan Hospital. Identified risk factors for ESBL-producing E. coli bacteremia were age, comorbidities based on the Charlson index, medical devices, history of hospitalization and history of antibiotics therapy including risk factors on mortality. Bivariate analysis of categorical group differences (Chi-square or Fisher test) and multivariate analysis with logistic regression tests were performed to identify the correlation of these factors to ESBL bacteremia and mortality.

Results. A total of 116 subjects E. coli bacteremia were included, eighty one percent of subjects 18 years old and 52.6% was male. The common site of infection was gastrointestinal tract 37.1% (43 subjects) and 54 subjects (46.6%) had malignancy comorbidity. History of antibiotic therapy (adjusted OR 2.78; 95%CI 1.20–6.45; p=0.017) and medical devices (adjusted OR 3.21; 95%CI 1.10–9.34; p=0.033) were associated with ESBL bacteremia. Among patients 18 years old (94 subjects) marely the history of antibiotics (adjusted OR 2.77; 95% CI 1.13 – 6.81; p= 0.027) was associated with ESBL-producing E. coli bacteremia. Mortality among bacteremia ESBL and non-ESBL-producing E. coli were not significantly different (p=0.059). Mortality was found 55,7% among ESBL-producing E. coli bacteremia and associated independent risk factors were age (adjusted OR 15.0; 95%CI 1.54–146.0; p=0.020) and sepsis (adjusted OR 6.5; 95%CI 1.91–22.16; p=0.003).

Conclusion. The risk factors for ESBL-producing E. coli bacteremia patients were a history of antibiotic therapy and medical devices. High mortality was found in patient with ESBL-producing E.coli bacteremia and the risk factors was associated with mortality were age and sepsis.