

TINGKAT RESISTENSI ISOLAT KLINIK BAKTERI GRAM NEGATIF BATANG TERHADAP ANTIBIOTIK SEFALOSPORIN GENERASI KETIGA

INTISARI

Latar Belakang: Seiring berjalannya waktu, resistensi antibiotik kian menjadi masalah besar terhadap kesehatan masyarakat, terutama kelompok bakteri Gram negatif. Resistensi antibiotik dapat menyebabkan kegagalan terapi sehingga pasien lebih lama dirawat di rumah sakit, peningkatan kebutuhan sumber daya kesehatan, kerugian material, keterlambatan proses penyembuhan setelah infeksi, hingga kematian.

Tujuan: Penelitian ini bertujuan untuk mengetahui tingkat resistensi isolat klinik bakteri Gram negatif batang terhadap antibiotik sefalosporin generasi ketiga di Instalasi Laboratorium Terpadu RSUP Dr. Sardjito dan menentukan apakah antibiotik ini masih dapat digunakan sebagai pilihan terapi infeksi bakteri Gram negatif batang.

Metode Penelitian: Penelitian ini merupakan penelitian observasional analitik dengan pendekatan retrospektif. Penelitian dilakukan dengan mengambil data sekunder hasil pemeriksaan kultur dan uji kepekaan antibiotik pada isolat klinik bakteri Gram negatif batang dari sistem informasi laboratorium, Instalasi Laboratorium Terpadu RSUP Dr. Sardjito. Kriteria inklusi penelitian ini adalah isolat klinik bakteri Gram negatif batang yang ditemukan dalam kultur berbagai jenis sampel dan tersedia hasil uji kepekaan antibiotik sefalosporin generasi ketiga, sedangkan kriteria eksklusinya adalah data demografi pasien yang tidak lengkap. Data yang diperoleh selanjutnya diolah menggunakan analisis statistik deskriptif dengan menggunakan tabel distribusi frekuensi yang dinyatakan dalam persentase. Uji statistik yang digunakan adalah *Z test*.

Hasil Penelitian: Terdapat 520 isolat bakteri Gram negatif batang yang telah terkumpul selama periode penelitian. Berdasarkan ruang perawatan pasien, isolat bakteri Gram negatif batang lebih banyak ditemukan di bangsal non-intensif, yakni sebanyak 260 spesimen (49,92%). Bakteri Gram negatif batang paling sering diisolasi dari spesimen urin, yakni sebanyak 129 spesimen (24,80%). Secara umum, bakteri Gram negatif batang (*Escherichia coli*, *Klebsiella pneumoniae*, dan *Proteus mirabilis*) memiliki tingkat resistensi terhadap seftazidim sebesar 37,11% dan seftriakson sebesar 57,88%.

Simpulan: Tingkat resistensi isolat klinik bakteri Gram negatif batang terhadap antibiotik sefalosporin generasi ketiga masih rendah.

Kata Kunci: resistensi antibiotik, bakteri Gram negatif batang, sefalosporin generasi ketiga, antibiotik, bakteri.

RESISTANCE LEVEL OF CLINICAL ISOLATES OF GRAM-NEGATIVE ROD BACTERIA TO THIRD-GENERATION CEPHALOSPORIN ANTIBIOTICS

ABSTRACT

Background: Over time, antibiotic resistance has increasingly become a major public health issue, particularly among Gram-negative bacteria. Antibiotic resistance can lead to treatment failures, resulting in longer hospital stays for patients, increased demand for healthcare resources, material losses, delayed recovery after infections, and even death.

Objective: This study aims to determine the resistance level of clinical isolates of Gram-negative rod bacteria to third-generation cephalosporin antibiotics at the Integrated Laboratory Unit of Dr. Sardjito General Hospital and to ascertain whether these antibiotics can still be used as a treatment option for Gram-negative rod bacterial infections.

Methods: This study is an observational analytical study with a retrospective approach. The research was conducted by collecting secondary data from culture results and antibiotic susceptibility tests of clinical isolates of Gram-negative rod bacteria from the laboratory information system at the Integrated Laboratory Unit of Dr. Sardjito General Hospital. The inclusion criteria for this study were clinical isolates of Gram-negative rod bacteria found in cultures of various sample types with available results of third-generation cephalosporin antibiotic susceptibility tests, while the exclusion criteria were incomplete patient demographic data. The obtained data were then processed using descriptive statistical analysis with frequency distribution tables expressed in percentages. The statistical test used was the Z test.

Results: A total of 520 Gram-negative rod bacterial isolates were collected during the study period. Based on patient care units, Gram-negative rod bacterial isolates were more frequently found in non-intensive wards, with 260 specimens (49.92%). Gram-negative rod bacteria were most commonly isolated from urine specimens, with 129 specimens (24.80%). Generally, Gram-negative rod bacteria (*Escherichia coli*, *Klebsiella pneumoniae*, and *Proteus mirabilis*) showed a resistance rate of 37.11% to ceftazidime and 57.88% to ceftriaxone.

Conclusion: The resistance level of clinical isolates of Gram-negative rod bacteria to third-generation cephalosporin antibiotics is still relatively low.

Keywords: antibiotic resistance, Gram-negative rod bacteria, third-generation cephalosporins, antibiotics, bacteria.