

ABSTRAK

Faktor Risiko Infeksi Bakteri Gram Negatif Resisten Karbapenem Pada Pasien Rawat Inap di RSUD Dr. Soetomo Surabaya**Swiandini Kumala**

Obyektif: Infeksi bakteri Gram negatif resisten karbapenem semakin meningkat pada beberapa dekade terakhir. *Carbapenem Resistant Enterobacteriaceae* (CRE, misal *Klebsiella pneumoniae*, *Escherichia coli*), *Carbapenem Resistant Acinetobacter Baumannii* (CRAB) dan *Carbapenem Resistant Pseudomonas Aeruginosa* (CRPA), muncul sebagai penyebab utama *Hospital Associated Infections* (HAI). Infeksi bakteri Gram negatif resisten karbapenem berhubungan dengan tingginya angka mortalitas, biaya perawatan rumah sakit, dan tingginya risiko penggunaan antibiotik yang kurang tepat dibandingkan dengan infeksi bakteri Gram negatif sensitif karbapenem. Terdapat beberapa faktor risiko yang berperan dalam terjadinya infeksi bakteri Gram negatif resisten karbapenem, diantaranya usia, jenis kelamin, lama rawat inap, pernah dirawat di *Intensive Care Unit* (ICU) sebelumnya, penyakit komorbid, kondisi *immunocompromised*, penggunaan alat dan prosedur tindakan invasif serta penggunaan antibiotik sebelumnya. Tujuan dari penelitian ini adalah untuk menganalisis faktor risiko pada penyakit infeksi yang disebabkan oleh bakteri Gram negatif resisten karbapenem pada pasien rawat inap di RSUD Dr. Soetomo Surabaya.

Metode: Penelitian ini merupakan penelitian analitik observasional dengan pendekatan *cross sectional*. Sampel penelitian merupakan isolat bakteri batang Gram negatif resisten dan sensitif karbapenem dari pasien rawat inap yang telah mengirim sampel pemeriksaan mikrobiologi berupa urin dan sputum ke Laboratorium Mikrobiologi Klinik RSUD Dr. Soetomo selama periode September-Desember 2019. Sampel yang terkumpul dan memenuhi kriteria inklusi selanjutnya dilakukan analisa faktor risiko dengan menelusuri rekam medik pasien dan mencatatnya dalam lembar *Case Report Form* (CRF).

Hasil: Terkumpul sebanyak 82 isolat bakteri terdiri dari 41 (50%) bakteri batang Gram negatif resisten karbapenem dan 41 (50%) bakteri batang Gram negatif sensitif karbapenem. Riwayat penggunaan antibiotik sebelum kultur (OR=8.972; $p = 0.000$; 95% CI = 2.374-33.908) teridentifikasi sebagai faktor risiko infeksi bakteri Gram negatif resisten karbapenem yang signifikan secara statistik.

Kesimpulan: Riwayat penggunaan antibiotik sebelum kultur merupakan faktor risiko infeksi bakteri Gram negatif resisten karbapenem

Kata kunci: Gram negatif resisten karbapenem, Faktor risiko, Indonesia

ABSTRACT**Risk Factors for Carbapenem Resistant Gram-Negative Bacterial Infection
in Inpatients at RSUD Dr. Soetomo Surabaya****Swiandini Kumala**

Objective: Carbapenem resistant Gram negative bacterial infections have increased in recent decades. Carbapenem Resistant Enterobacteriaceae (CRE, eg *Klebsiella pneumoniae*, *Escherichia coli*), Carbapenem Resistant *Acinetobacter Baumannii* (CRAB) and Carbapenem Resistant *Pseudomonas Aeruginosa* (CRPA), appear as the main causes of Hospital Associated Infections (HAI). Carbapenem resistant Gram negative bacterial infections are associated with high mortality rates, hospital treatment costs, and high risks of using antibiotics that are less precise than Gram negative bacterial infections that are sensitive to carbapenem. There are several risk factors that play a role in the occurrence of carbapenem resistant Gram-negative bacterial infections, including age, sex, length of stay, having been treated in the Intensive Care Unit (ICU) before, comorbid diseases, immunocompromised conditions, use of invasive tools and procedures, and also the usage of previous antibiotics. The purpose of this study was to analyze the risk factors for infectious diseases caused by carbapenem resistant Gram negative bacteria in inpatients at RSUD Dr. Soetomo Surabaya.

Method: This research is an observational analytic study with cross sectional approach. The research sample was isolate resistant Gram negative and carbapenem sensitive stem from inpatients who had sent microbiological examination samples in the form of urine and sputum to the Clinical Microbiology Laboratory of RSUD Dr. Soetomo during September-December 2019 period. Samples collected and fulfilling the inclusion criteria were then analyzed for its risk factors by tracking the patient's medical records and recording them in the Case Report Form (CRF) sheet.

Results: As many as 82 bacterial isolates were collected consisting of 41 (50%) Carbapenem resistant Gram negative stem bacteria and 41 (50%) carbapemen-sensitive Gram-negative stem bacteria. A history of antibiotic use before culture (OR = 8,972; p= 0,000; 95% CI = 2,374-33,908) was identified as a risk factor for carbapenem resistant Gram negative bacterial infection which was statistically significant.

Conclusion: History of antibiotic use before culture is a risk factor for carbapenem resistant Gram negative bacterial infection

Keywords: carbapenem resistant Gram negative, Risk factors, Indonesia