

## INTISARI

### Kajian tentang Infeksi Bakteri, Penggunaan Antibiotik, dan Luaran Klinis pada Pasien COVID-19 di RS Panti Rapih Yogyakarta

**Pendahuluan:** infeksi bakteri pada pasien COVID-19 meningkatkan angka kematian di berbagai negara. Hal tersebut mendorong penggunaan antibiotik yang masif. Sementara itu, luaran pasien ditentukan oleh berbagai faktor. Penelitian ini bertujuan untuk mengetahui pola bakteri, penggunaan antibiotik, dan luaran pasien COVID-19 dengan infeksi bakteri di RS Panti Rapih Yogyakarta.

**Metode dan Subjek Penelitian:** penelitian ini adalah penelitian *single -center, retrospective, cross sectional*. Data yang diambil dari kurun waktu Maret 2021 sampai Maret 2022 (12 bulan). Kriteria inklusi adalah pasien COVID-19 yang dirawat inap, mendapatkan terapi antibiotik, dan dilakukan kultur mikroorganisme dari spesimen klinis. Kriteria eksklusi adalah data tidak lengkap dan hasil kultur bukan bakteri patogen.

**Hasil Penelitian:** didapatkan 97 subjek dengan total 110 spesimen dan 205 seri terapi antibiotik. Bakteri yang dominan adalah *Klebsiella pneumoniae* 38 (37.8%), *Acinetobacter baumannii* 22 (21.2%), dan *Pseudomonas aeruginosa* 15 (14.6%). Antibiotik terbanyak adalah beta laktam (meropenem, sefalosporin generasi 1 – 4) sebanyak 111 (54%), diikuti oleh fuoroquinolon (ciprofloxacin dan moxifloxacin) sebanyak 58 (28%). Sebanyak 15 subjek (8%) diberikan makrolide (azithromycin dan chlarythromycin), dan 21 subjek (10%) mendapatkan antibiotik dari berbagai golongan.

Luaran pasien COVID-19 dengan koinfeksi di RS Panti Rapih Yogyakarta adalah 42 orang (43,3%) sembuh sedangkan sebanyak 55 orang (56,7%) meninggal dunia; sementara itu dengan analisis bivariat Chi square, faktor yang mempengaruhi luaran adalah netrofilia ( $p=0,025$ ), stadium berat/kritis ( $p=0,004$ ), gangguan paru ( $p=0,011$ ), dan infeksi bakteri XDRO ( $p=0,016$ ). Analisis regresi logistik menunjukkan bahwa riwayat gangguan paru adalah faktor yang paling mempengaruhi luaran meninggal pada pasien COVID-19 dengan koinfeksi bakteri di RS Panti Rapih Yogyakarta.

**Kesimpulan:** Bakteri terbanyak penyebab infeksi pada pasien COVID-19 di RS Panti Rapih Yogyakarta adalah *Klebsiella pneumoniae* 38 (37.8%), *Acinetobacter baumannii* 22 (21.2%), dan *Pseudomonas aeruginosa* 15 (14.6%). Antibiotik terbanyak yang diberikan pada pasien COVID-19 di RS Panti Rapih Yogyakarta dengan infeksi bakteri adalah beta laktam (meropenem, sefalosporin generasi 1 – 4) sebanyak 111 (54%), diikuti oleh fuoroquinolon (ciprofloxacin dan moxifloxacin) sebanyak 58 (28%). Sebanyak 15 subjek (8%) diberikan makrolide (azithromycin dan chlarythromycin), dan 21 subjek (10%) mendapatkan antibiotik dari berbagai golongan. Luaran sembuh sebanyak 42 orang (43,3%) sedangkan 55 orang (56,7%) meninggal dunia. Faktor yang paling mempengaruhi luaran adalah riwayat gangguan paru pada pasien.

**Kata Kunci:** infeksi bakteri, antibiotika, COVID-19, luaran pasien

## ABSTRACT

### Study of Bacterial Infection, Antibiotics Use, and Clinical Outcomes in Covid-19 Patients in Panti Rapih Hospital, Yogyakarta

**Introduction:** Bacterial infections in COVID-19 patients increase mortality in many countries. This prompted the massive use of antibiotics. Meanwhile, the patient's outcome is determined by various factors. This study aims to determine the pattern of bacteria, use of antibiotics, and the outcome of COVID-19 patients with bacterial infections at Panti Rapih Hospital, Yogyakarta.

**Methods:** this research was single -center, retrospective, cross sectional study. The data were taken from March 2021 until March 2022 (12 months). Inclusion criteria were COVID-19 inpatient, given antibiotic, and the specimen had taken and identified in microbiology laboratory. Exclusion criteria were incomplete data and laboratory result not concluded as pathogen.

**Result:** subjects were 97, with total 110 clinical specimens dan 205 antibiotics series. Bacteria identification dominated with *Klebsiella pneumoniae* 38 (37.8%), *Acinetobacter baumannii* 22 (21.2%), and *Pseudomonas aeruginosa* 15 (14.6%). Antibiotic usage were dominated by beta lactam (meropenem, cephalosporins of generation 1 – 4) 111 (54%), followed by fuoroquinolon (ciprofloxacin and moxifloxacin) 58 (28%). A total of 15 subjects (8%) were given macrolides (azithromycin and chlarythromycin), and 21 subjects (10%) received antibiotics from various groups. Mortality rate was 56,7%. Meanwhile, with Chi square bivariate analysis, the factors influencing the outcome were neutrophilia ( $p=0.025$ ), severe/critical stage ( $p=0.004$ ), and lung disorders ( $p=0.011$ ). Logistic regression analysis showed that a history of pulmonary disorders was the most influential factor in the outcome of death in COVID-19 patients with bacterial co-infection at Panti Rapih Hospital, Yogyakarta.

**Conclusion:** The most bacteria that cause infection in COVID-19 patients at Panti Rapih Hospital Yogyakarta are *Klebsiella pneumoniae* 38 (37.8%), *Acinetobacter baumannii* 22 (21.2%), and *Pseudomonas aeruginosa* 15 (14.6%). The most antibiotics given to COVID-19 patients at Panti Rapih Hospital Yogyakarta with bacterial infections beta lactam (meropenem, cephalosporins of generation 1 – 4) 111 (54%), followed by fuoroquinolon (ciprofloxacin and moxifloxacin) 58 (28%). A total of 15 subjects (8%) were given macrolides (azithromycin and chlarythromycin), and 21 subjects (10%) received antibiotics from various groups. As patients output, 42 people recovered (43.3%) while 55 people (56.7%) had passed away. The factor that most affects the outcome is the patient's previous history of pulmonary disorders.

**Keywords:** bacterial infection, antibiotic usage, COVID-19, patient output