

ABSTRAK

Latar Belakang:

Ikterus obstruktif umumnya disebabkan oleh koledokolitiasis atau tumor ganas. Kultur empedu berperan penting dalam mengidentifikasi patogen dan menentukan terapi empiris, namun data komparatif antara etiologi jinak dan ganas masih terbatas. Perbandingan ini penting secara klinis karena kedua kondisi tersebut memiliki perbedaan mendasar dalam patofisiologi, durasi obstruksi, serta riwayat manipulasi bilier, yang semuanya memengaruhi kolonisasi bakteri dan pola resistensi. Obstruksi jinak biasanya bersifat akut dan berkaitan dengan organisme Gram-negatif enterik akibat refluks duodenobilier sementara, sedangkan obstruksi ganas bersifat kronis, sering disertai pemasangan stent bilier, prosedur endoskopi berulang, serta paparan flora rumah sakit. Memahami perbedaan ini penting untuk menyesuaikan regimen antibiotik empiris dan meningkatkan luaran infeksi pada pasien dengan ikterus obstruktif.

Metode:

Studi potong lintang dilakukan di RSUP Dr. Sardjito, Yogyakarta, antara Januari hingga Juli 2025, melibatkan 22 pasien (11 malignansi, 11 koledokolitiasis). Sampel empedu dikumpulkan secara intraoperatif dan dikultur dalam waktu dua jam. Uji sensitivitas antibiotik mengikuti pedoman Clinical and Laboratory Standards Institute (CLSI) 2023. Analisis statistik menggunakan uji Shapiro–Wilk, uji t Student atau Mann–Whitney U, serta Chi-square atau Fisher’s exact. Regresi logistik digunakan untuk menentukan odds ratio (OR) dengan interval kepercayaan (CI) 95%; $p < 0,05$.

Hasil:

Kultur empedu positif lebih sering ditemukan pada koledokolitiasis (72,7%) dibandingkan malignansi (27,3%) (OR 5,78; 95% CI 1,02–32,9; $p = 0,043$). Bakteri Gram-negatif, terutama *Escherichia coli* dan *Klebsiella* spp., mendominasi pada koledokolitiasis, sedangkan kokus Gram-positif lebih banyak pada malignansi. Pola resistensi juga berbeda: isolat dari koledokolitiasis menunjukkan resistensi lebih tinggi terhadap ciprofloxacin, cefuroxime, meropenem, dan vancomycin, sedangkan isolat dari malignansi lebih resisten terhadap cefepime dan tetracycline.

Kesimpulan:

Koledokolitiasis berhubungan dengan tingkat kultur empedu positif yang lebih tinggi dan dominasi bakteri Gram-negatif, sedangkan obstruksi ganas cenderung menghasilkan empedu steril atau bakteri Gram-positif. Perbedaan profil resistensi ini menegaskan perlunya pemilihan antibiotik empiris berdasarkan etiologi pada pasien dengan ikterus obstruktif.

Kata kunci:

Ikterus obstruktif; kultur empedu; koledokolitiasis; malignansi; resistensi antibiotik

ABSTRACT

Background:

Obstructive jaundice is commonly caused by choledocholithiasis or malignant tumors. Bile culture plays a critical role in identifying pathogens and guiding empirical therapy, yet comparative data between benign and malignant etiologies remain scarce. **Such comparison is clinically important because the two conditions differ fundamentally in their pathophysiology, duration of obstruction, and prior biliary manipulation, all of which influence bacterial colonization and resistance patterns.** Benign obstruction tends to be acute and associated with enteric Gram-negative organisms introduced through transient duodenobiliary reflux, whereas malignant obstruction is typically chronic, often accompanied by biliary stenting, repeated endoscopic procedures, and exposure to hospital-acquired flora. **Understanding these distinctions is essential for tailoring empirical antibiotic regimens and improving infection outcomes in patients with obstructive jaundice.**

Methods:

A cross-sectional study was conducted at Dr. Sardjito General Hospital, Yogyakarta, between January and July 2025, involving 22 patients (11 malignancy, 11 choledocholithiasis). Bile samples were collected intraoperatively and cultured within two hours. Antibiotic susceptibility testing followed the Clinical and Laboratory Standards Institute (CLSI) 2023 guidelines. Statistical analysis used the Shapiro–Wilk test, Student’s t-test or Mann–Whitney U, and Chi-square or Fisher’s exact test. Logistic regression was applied to determine odds ratios (OR) with 95% confidence intervals (CI); $p < 0.05$.

Results:

Positive bile cultures were more frequent in choledocholithiasis (72.7%) than in malignancy (27.3%) (OR 5.78; 95% CI 1.02–32.9; $p = 0.043$). Gram-negative bacteria, mainly *Escherichia coli* and *Klebsiella spp.*, predominated in choledocholithiasis, while Gram-positive cocci were more common in malignancy. Resistance patterns differed: choledocholithiasis isolates showed higher resistance to ciprofloxacin, cefuroxime, meropenem, and vancomycin, whereas malignancy isolates exhibited greater resistance to cefepime and tetracycline.

Conclusions:

Choledocholithiasis was associated with higher rates of positive bile cultures and Gram-negative predominance, while malignant obstruction yielded more sterile or Gram-positive cultures. Distinct resistance profiles underscore the need for etiology-based empirical antibiotic selection in patients with obstructive jaundice.

Keywords:

Obstructive jaundice; bile culture; choledocholithiasis; malignancy; antibiotic resistance