General Antibiotic Prophylaxis Before ERCP is Still Not Supported

Systematic Review and Meta-Analysis

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BACKGROUND

Cholangitis is a clinically important complication of ERCP. Although antibiotic prophylaxis is recommended in selected high-risk situations, its overall effectiveness remains uncertain.

AIMS

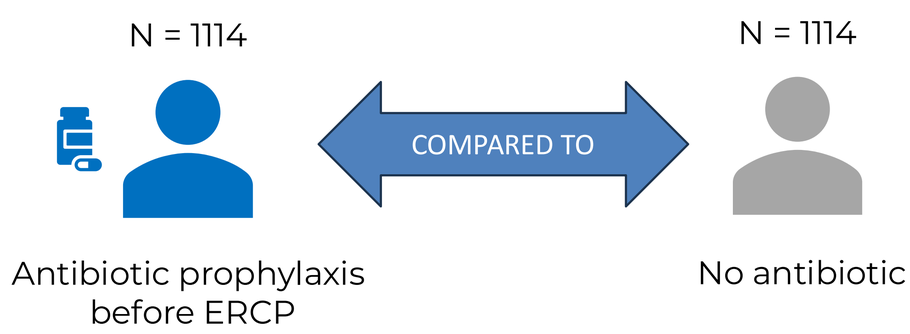
Evaluate the safety and effectiveness of antibiotic prophylaxis in preventing post-ERCP cholangitis and other infectious complications

METHODS

- **Systematic search** performed in MEDLINE, Embase, CENTRAL, Scopus, and Web of Science (November 2024, updated March 2026).
- **Included studies**: RCTs comparing antibiotic prophylaxis versus no prophylaxis before ERCP.
- **Outcomes**: cholangitis (primary), bacteremia, septicemia, pancreatitis, and mortality.
- **Random-effects meta-analysis** (Hartung–Knapp adjustment) was used to calculate risk ratios with 95% confidence intervals

RESULTS

14 Randomized controlled trials



Outcome	RR [95%CI]	p value
CHOLANGITIS	0.60 [0.29-1.26]	0.154
SEPTICEMIA	0.56 [0.20-1.55]	0.204
BACTEREMIA	0.52 [0.26-1.06]	0.067
PANCREATITIS	0.73 [0.41-1.30]	0.230
MORTALITY	0.16 [0.73-1.84]	0.471
SUBGROUP: CHOLANGITIS IN BILIARY OBSTRUCTION	0.49 [0.14-1.69]	0.184

A p-value < 0.05 was considered statistically significant

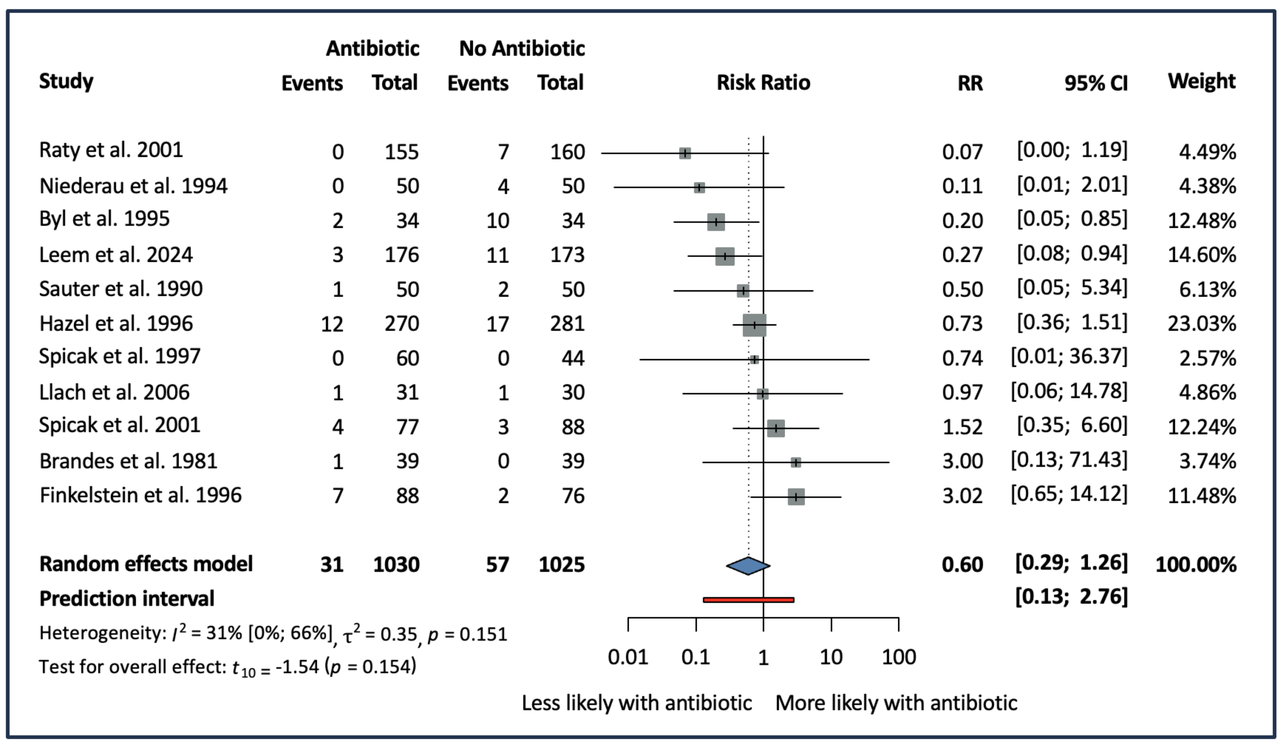


Figure 1. Forest plot demonstrating the effect of antibiotic prophylaxis compared to no antibiotics before ERCP on **cholangitis**.

ERCP – Endoscopic retrograde cholangio-pancreatography
RCT – Randomized controlled trial
RR – Risk ratio
95%CI – 95 % confidence interval

CONCLUSIONS

Routine use of antibiotic prophylaxis in unselected patients undergoing ERCP is not supported.
All outcomes showed a consistent direction favoring antibiotics, but none reached statistical significance.
Future studies should focus on identifying high-risk groups who may benefit from prophylaxis.