

# Beyond the Drain: Strategies to Prevent and Manage Biliary Sepsis in Cancer Patients

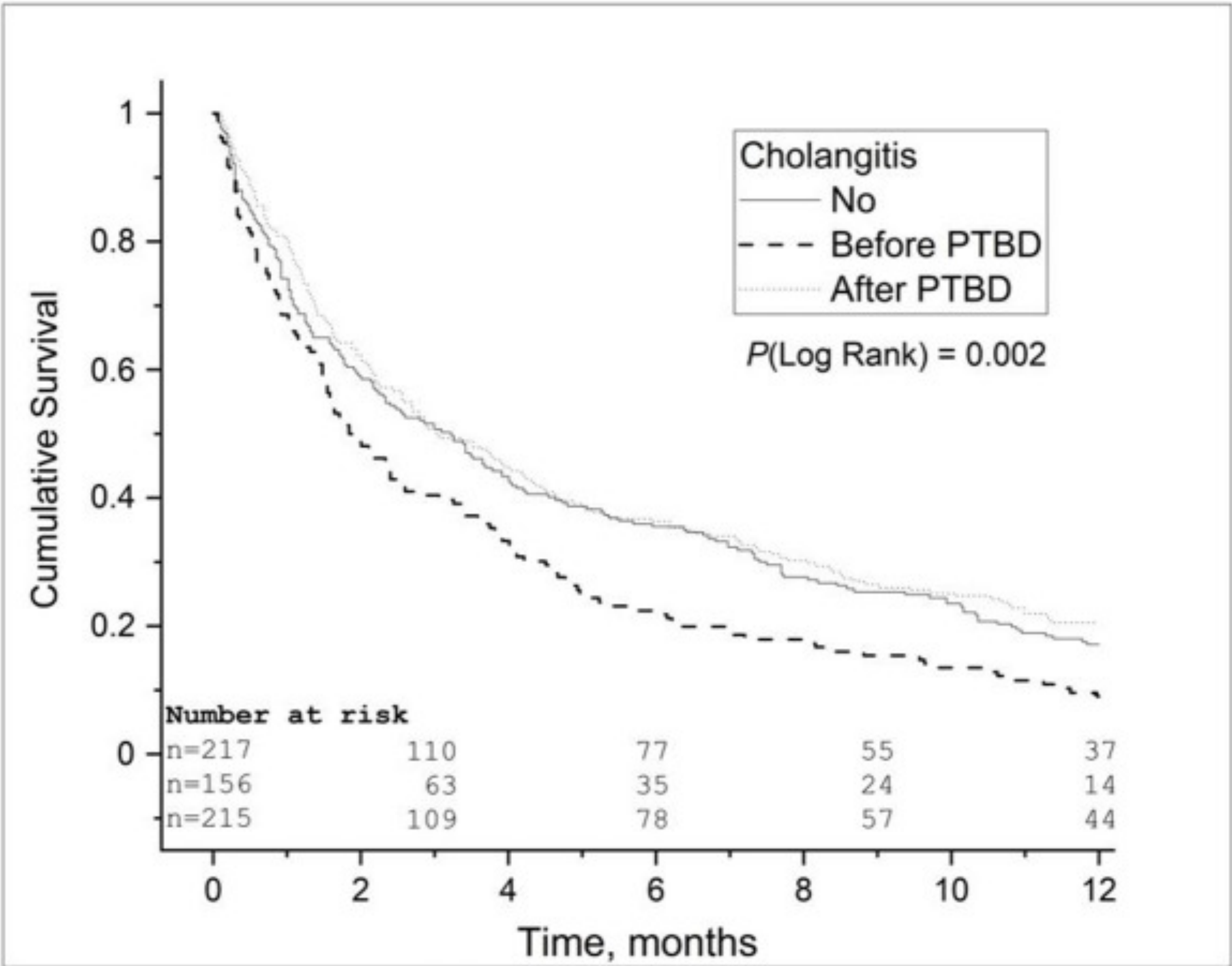
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## Purpose

- To review current evidence on the incidence, risk factors, prevention, and management strategies for biliary sepsis following percutaneous transhepatic biliary drainage (PTBD) in patients with malignant biliary obstruction.

## Materials and Methods

- A targeted literature review was conducted to evaluate the incidence, risk factors, and management strategies for biliary sepsis following PTBD in the setting of malignant biliary obstruction.
- Sources included retrospective cohort studies and clinical trials published within the last 10 years.



- Figure 1: Adapted from Niemelä et al. Kaplan-Meier 1-year survival analysis of patients undergoing PTBD for malignant biliary obstruction, stratified by timing of cholangitis (pre- vs. post-PTBD vs. none). [1]

## Results

- PTBD as palliation:** PTBD is a well-established intervention for malignant biliary obstruction but carries risks including hemorrhage, bile leak, and life-threatening biliary sepsis.
- Impact of pre-PTBD cholangitis:** In a cohort of 588 patients with gastrointestinal cancers, cholangitis before PTBD was associated with significantly poorer survival compared to cholangitis after PTBD (30-day mortality: 30.8% vs. 19.5% vs. 25.8% without cholangitis), underscoring the importance of timely oncology consultation and chemotherapy consideration [1]
- Risk factors for infection:** Yu et al. identified multiple predictors of biliary infection post-PTBD, including patient age, site of obstruction, drainage method, tumor stage, hemoglobin level, Child-Pugh score, immune cell profile, and bile culture results. Drainage method, Child-Pugh score, and positive bile cultures were independent risk factors. [2]
- Comparison of drainage techniques:** Dorcatto et al. reported that preoperative percutaneous biliary drainage was associated with fewer complications compared to endoscopic drainage in patients awaiting pancreatoduodenectomy. [3]
- Antibiotic prophylaxis and mortality:** While antibiotic prophylaxis reduced infectious complications, early mortality remained high, with 16% of patients dying within 14 days post-PTBD. [4]
- Clinical implication:** These findings highlight the need for individualized risk assessment, careful patient selection, and thorough counseling regarding the risks and limited benefits of PTBD when used solely for palliation.

## Conclusions

- Biliary sepsis remains a significant complication of PTBD in patients with malignant obstruction.
- A nuanced understanding of predisposing factors, such as baseline liver function, drainage technique, and microbiological findings, can guide both procedural planning and post-procedural care.
- Early oncology collaboration and tailored infection prevention strategies may improve both short-term outcomes and overall survival in this high-risk population.

## References

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