

## **An Evidence-Based Approach to Nursing Recognition and Management of Early Sepsis in Percutaneous Transhepatic Biliary Drainage (PTBD)**

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**Introduction:** Percutaneous Transhepatic Biliary Drainage (PTBD) is an interventional radiology (IR) procedure indicated for relief of biliary obstructive symptoms: pruritus, jaundice and cholangitis cause by benign or malignant conditions. Gallstones, cholangiocarcinoma and hepatobiliary malignancy are frequently seen to cause sepsis.

**Identification of the Problem:** Although PTBD is generally a safe procedure, significant complications manifest as systemic inflammatory response syndrome (SIRS) that leads to mortality. Early post anesthesia care unit (PACU) nursing recognition is critical in effectively managing these high risk patients.

**EBP Question/Purpose: PICO question. Databases utilized:** What is the best practice for patients post biliary drain placement presenting symptoms of systemic inflammatory response syndrome (SIRS)? (P) Patients post PTBD; (I) Early recognition of SIRS; (C) Prompt/early management of SIRS compare to standard care in alleviating sepsis (O). The evidence-based practice (EBP) searches were conducted using PUBMED/CINAHL databases.

**Methods/Evidence:** The evidence reviewed from PUBMED/CINAHL ranged from 2013 to 2019. Mesh terms were: interventional, biliary drainage, PTBD, pathophysiology, cholangitis, symptoms, complications, sepsis and SIRS. The first search yielded eight out of 36 articles that met PICO criteria. The second and final search included eight additional articles with terms of mortality and patient outcomes.

**Significance of Findings/Outcomes:** EBP appraisal revealed compelling science for recognizing and managing early SIRS in PTBD patients. Team created an EBP algorithm (see poster) that was effective for PACU nurses in early recognition of SIRS and prompt PACU nursing management to mitigate deteriorating symptoms of increased heart rates and rigors followed by fevers to improve quality patient care.

**Implications for perianesthesia nurses and future research:** Post PTBD SIRS can be challenging for PACU nurses to manage life-threatening complications. Evidence supports the development of an algorithm tool that focuses on recognition, assessment, and appropriate management of SIRS in this population. The science recommends easy accessibility of standing physician order sets, including medications, such as intravenous (IV) fluids, IV antibiotics, and acetaminophen as SIRS management in PACU strategies to facilitate positive patient outcomes.