ABSTRAK

Latar Belakang: Cedera duktus biliaris (CDB) merupakan komplikasi klinis bermakna pasca-kolesistektomi, terutama pada cedera mayor yang memerlukan rekonstruksi hepatobilier atau rujukan ke pusat tersier. Data di Indonesia yang membedakan prevalensi institusional dan beban kasus rujukan masih terbatas. Penelitian ini mengevaluasi prevalensi, karakteristik cedera, tatalaksana, dan praktik keselamatan operator terkait CDB pasca-kolesistektomi di pusat rujukan hepatopankreatobilier tersier di Indonesia.

Metode: Studi observasional retrospektif dilakukan di RSUP Dr. Kariadi Semarang pada periode Januari 2020 hingga Desember 2025, disertai survei sukarela kepada operator. Prevalensi CDB internal dihitung menggunakan seluruh prosedur kolesistektomi di institusi sebagai denominator, sedangkan kasus rujukan dianalisis secara terpisah. Cedera diklasifikasikan berdasarkan sistem Strasberg.

Hasil: Dari 1.457 prosedur kolesistektomi, terdiri atas 1.378 laparoskopik (94,6%) dan 79 terbuka (5,4%), terdapat 55 pasien CDB yang ditangani. Sebanyak 13 kasus (23,6%) merupakan kasus internal dan 42 kasus (76,4%) merupakan rujukan, dengan prevalensi kumulatif CDB internal sebesar 0,89%. Cedera berat Strasberg D–E5 ditemukan pada 45 kasus (81,8%), dengan Strasberg E2 sebagai subtipe tersering (41,8%). Tatalaksana definitif meliputi hepaticojejunostomy Roux-en-Y pada 26 pasien (47,3%), ERCP/stenting pada 17 pasien (30,9%), reparasi primer pada 11 pasien (20,0%), dan drainase saja pada satu pasien (1,8%). Cedera berat berhubungan bermakna dengan pemilihan hepaticojejunostomy Roux-en-Y (OR 11,25; IK 95% 1,31–96,49; p = 0,013). Dari 78 operator yang disurvei, 12 operator (15,4%) melaporkan pernah mengalami kejadian CDB.

Kesimpulan: Prevalensi internal CDB pasca-kolesistektomi di RSUP Dr. Kariadi Semarang adalah 0,89%, sedangkan sebagian besar kasus yang ditangani merupakan kasus rujukan. Cedera berat mendominasi dan hepaticojejunostomy Roux-en-Y menjadi modalitas definitif tersering. Penguatan registri prospektif, dokumentasi Critical View of Safety, protokol institusional, dan pelatihan terstruktur diperlukan untuk meningkatkan pencegahan dan tata laksana CDB.

Kata kunci: Cedera duktus biliaris; Kolesistektomi; *Critical View of Safety*; Hepaticojejunostomy; Hepatopankreatobilier

ABSTRACT

Background: *Bile duct injury (BDI) is a clinically significant complication of cholecystectomy, particularly when major injuries require hepatobiliary reconstruction or referral to specialized centers. Indonesian data distinguishing institutional prevalence from referral burden remain limited. This study evaluated the prevalence, injury characteristics, management patterns, and operator safety practices related to post-cholecystectomy BDI at a tertiary hepatopancreatobiliary referral center in Indonesia.*

Methods: *A retrospective observational study was conducted at RSUP Dr. Kariadi Semarang from January 2020 to December 2025, accompanied by a voluntary operator survey. Internal BDI prevalence was calculated using all institutional cholecystectomies as the denominator, while referred cases were analyzed separately. Injuries were classified according to the Strasberg system.*

Results: *Among 1,457 cholecystectomies, including 1,378 laparoscopic procedures (94.6%) and 79 open procedures (5.4%), 55 patients with BDI were managed. Thirteen cases (23.6%) were internal and 42 cases (76.4%) were referrals, yielding a cumulative internal BDI incidence of 0.89%. Severe injuries, defined as Strasberg D–E5, accounted for 45 cases (81.8%), with Strasberg E2 being the most frequent subtype (41.8%). Definitive management included Roux-en-Y hepaticojejunostomy in 26 patients (47.3%), ERCP/stenting in 17 patients (30.9%), primary repair in 11 patients (20.0%), and drainage only in one patient (1.8%). Severe injury was significantly associated with Roux-en-Y hepaticojejunostomy (OR 11.25; 95% CI 1.31–96.49; p = 0.013). Among 78 surveyed operators, 12 operators (15.4%) reported prior BDI experience.*

Conclusions: *The internal prevalence of post-cholecystectomy BDI at RSUP Dr. Kariadi Semarang was 0.89%, while most managed cases were referrals. Severe injuries predominated, and Roux-en-Y hepaticojejunostomy was the most common definitive treatment. Prospective registries, standardized Critical View of Safety documentation, institutional protocols, and structured training are needed to improve BDI prevention and management.*

Keywords: *Bile duct injury; Cholecystectomy; Critical View of Safety; Hepaticojejunostomy; Hepatopancreatobiliary*