

Introduction

Antibiotics are often overused in acute pancreatitis (AP) on account of the misinterpreted CRP elevation. Adequate reasons for antibiotics in AP include: **cholangitis (CA) and cholecystitis (CC)**. However, there is **significant overlap** between their diagnostic criteria (**Tokyo criteria**) and the picture seen in **biliary AP**, thus their validity comes into question, together with the antibiotic practice in biliary AP.

We aimed to examine the fulfilment of Tokyo criteria in biliary AP, antibiotic practice, and evaluate associations with patient-important outcomes.

Methods

We conducted a secondary analysis of the **Hungarian Pancreatic Study Group's (HPSG)** multicenter, international, prospectively collected registry of AP patients. We retrospectively evaluated on admission abdominal imaging results to determine Tokyo guideline fulfilment, together with data already collected in the registry. We also evaluated the severity of CA and CC and how they correlated with clinically important outcomes of AP. Endoscopic retrograde cholangiopancreatography (ERCP) practice was also overviewed in definite CA cases. Finally, we evaluated antibiotic use and, when possible, extracted reasons for antibiotics. Chi-square and Fisher exact tests were used.

Results

Since the time of the abstract submission, we completed the analysis of all 944 biliary AP cases. **81.3% of patients received antibiotics** (mostly ceftriaxone and metronidazole). According to the Tokyo guidelines, 31.1% of patients fulfilled the diagnostic criteria for both CA and CC, 24.8% for CC only and 19% for CA only (Table 1). Antibiotic use was high (60.3%) even among those with neither condition on admission (most commonly for later developed / suspected CA or CC, or „empirically”).

About 2/3 of the CA/CC cases were mild, around 10% severe. **Mortality was below 1% in mild and moderate CA and CC patients, but considerably higher in severe cases** (12.8% and 20.8% in CA and CC). AP severity and length of hospitalization increased parallelly with CA/CC severity.

So far, we evaluated ERCP findings in 371 **CA patients** (Figure 1). **ERCP was performed in 90%** of the cases, mostly (77.2%) within the first 24 hours. **Common bile duct (CBD) stones were found in 55.7%.**

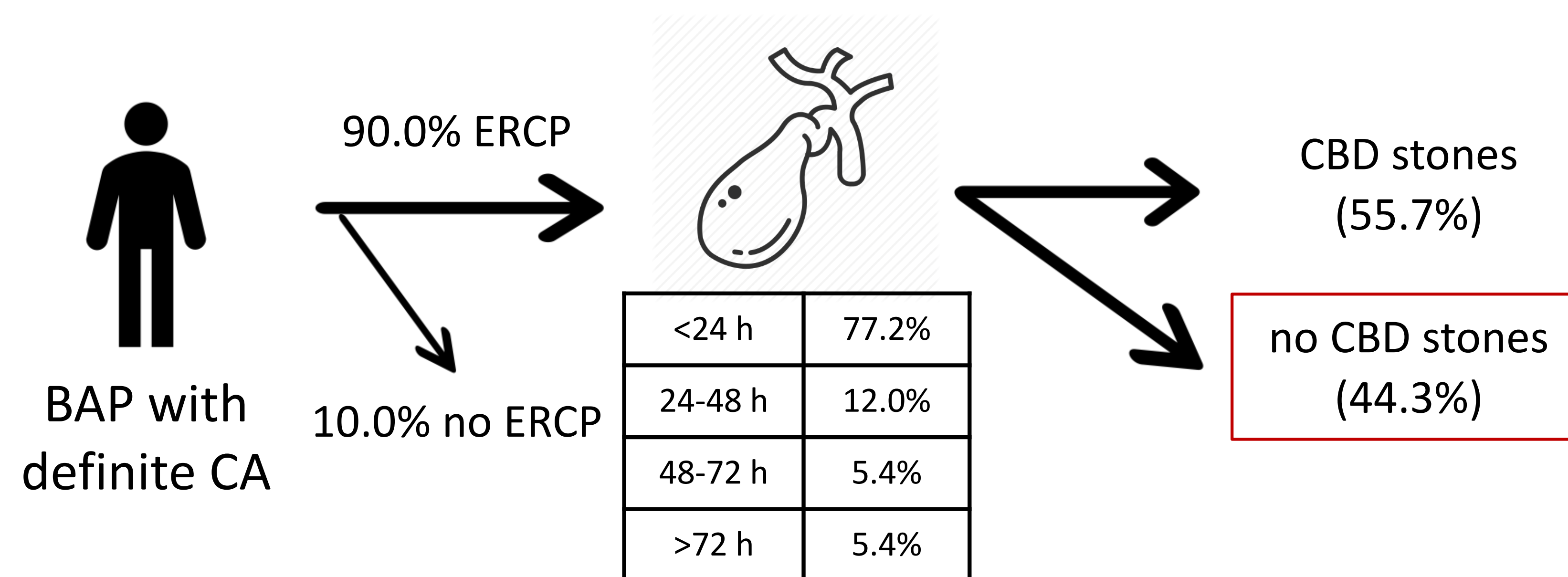


Figure 1. ERCP in pancreatitis patients with definite acute cholangitis. BAP: biliary acute pancreatitis; CA: acute cholangitis; %: percentage; ERCP: endoscopic retrograde cholangiopancreatography; h: hours; CBD: common bile duct.

Discussion

Almost **75% of biliary AP patients fulfilled the diagnostic criteria for CA/CC**, leading to a **high rate of antibiotic use**. While mortality is high in severe cases, it is below 1% when mild or severe CA/CC is presumed. Literary evidence suggests, that CBD stones are often not retained in biliary AP, leading to fast, spontaneous amelioration. In our cohort, around 44% didn't have stones upon ERCP examination. While cohort studies are not suitable to answer interventional questions, **a randomized trial testing antibiotics in mild/moderate CA cases without CBD stones on ERCP examination would be appropriate.**

	CC+CA	CC	CA	neither
n (% of total)	294 (31.1)	234 (24.8)	165 (17.5)	252 (26.7)
Age (years); mean ± SD	61.9 ± 16.5	62.4 ± 16.3	65.4 ± 16.0	60.0 ± 17.6
Female sex; n (%)	175 (59.5)	127 (54.3)	100 (60.6)	142 (56.3)
AP severity; n (%)				
mild	237 (80.6)	175 (74.8)	138 (83.6)	200 (79.4)
moderate	48 (16.3)	49 (20.9)	20 (12.1)	40 (15.9)
severe	9 (3.1)	10 (4.3)	7 (4.2)	12 (4.8)
Mortality; n (%)	5 (1.7)	8 (3.4)	3 (1.8)	2 (0.8)
Antibiotics; n (%)	262 (89.1)	218 (77.8)	135 (81.8)	152 (60.3)

Table 1 Baseline characteristics. Participants are divided into four groups based on the presence of acute cholecystitis or cholangitis according to the Tokyo guidelines. CA: cholangitis; CC: cholecystitis; p: P-value; n: number; SD: standard deviation; %: percentage.