



# Comparison of European and American societies for Gastrointestinal Endoscopy guidelines for prediction of choledocholithiasis in patients with acute biliary pancreatitis – a prospective single center study

Žan Peter Černe<sup>1,2</sup>, Nejc Sever<sup>3</sup>, Luka Strniša<sup>3</sup>, Samo Plut<sup>1</sup>, Jan Drnovšek<sup>1,2</sup>, Jurij Hanžel<sup>1,2</sup>, Darko Siuka<sup>1</sup>, Borut Štabuc<sup>1,2</sup>, David Drobne<sup>1,2</sup>

<sup>1</sup> Department of Gastroenterology, University Medical Centre Ljubljana, Slovenia

<sup>2</sup> Faculty of medicine, University of Ljubljana, Slovenia

Correspondence: david.drobne@gmail.com

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## BACKGROUND

Guidelines for management of suspected choledocholithiasis from both European (ESGE) [1] and

American societies for Gastrointestinal Endoscopy (ASGE) [2] were not primarily designed for patients with acute biliary pancreatitis (ABP), which differ from general population with choledocholithiasis.

Table 1: Comparison of ASGE 2019 and ESGE algorithms for diagnosis and management of suspected choledocholithiasis.

Algorithm of American Society for Gastrointestinal Endoscopy 2019 guidelines for risk assessment and management of suspected choledocholithiasis		
ERCP	High probability	<ul style="list-style-type: none"> <li>• CBD stone visible on transabdominal ultrasound/CT or</li> <li>• Clinical ascending cholangitis or</li> <li>• Total bilirubin &gt; 68,4 µmol/mL and dilatated CBD on transabdominal ultrasound/CT</li> </ul>
EUS	Intermediate probability	<ul style="list-style-type: none"> <li>• Abnormal liver biochemical tests or</li> <li>• Age &gt;55 or</li> <li>• Dilatated CBD on transabdominal ultrasound/CT</li> </ul>
/	Low probability	<ul style="list-style-type: none"> <li>• No predictors present</li> </ul>
Algorithm of European Society of Gastrointestinal Endoscopy 2019 guidelines for suspected common bile duct stones		
ERCP	High likelihood	<ul style="list-style-type: none"> <li>• Features of cholangitis or</li> <li>• CBD stones identified on transabdominal ultrasound</li> </ul>
EUS	Intermediate likelihood	<ul style="list-style-type: none"> <li>• Abnormal liver function tests or</li> <li>• CBD dilatation on transabdominal ultrasound</li> </ul>
/	Low likelihood	<ul style="list-style-type: none"> <li>• Normal liver function tests and no dilatation od CBD on transabdominal ultrasound</li> </ul>

Table 2: Comparison of ASGE 2019 probability and ESGE likelihood groups for common bile duct stones in acute biliary pancreatitis.

	Common Bile Duct Stone	
	Yes (N= 10)	No (N=30)
<b>ASGE high probability</b>	6 (75%)	2 (25%)
<b>ASGE intermediate probability</b>	4 (13.8%)	25 (86.2%)
<b>ASGE low probability</b>	0 (0%)	3 (100%)
<b>ESGE high likelihood</b>	4 (80%)	1 (20%)
<b>ESGE intermediate likelihood</b>	6 (20%)	24 (80%)
<b>ESGE low likelihood</b>	0 (0%)	5 (100%)

Moreover, they suggest different diagnostic and therapeutic workup in certain cases (Table 1). We previously performed assessment of both guidelines in the setting of ABP on retrospective cohort in which European guidelines outperformed American. [3]

### AIM

To further validate of our previous findings using a prospective cohort.

Table 3: Sensitivity and specificity of ASGE 2019 and ESGE algorithms and single predictors for prediction of choledocholithiasis in acute biliary pancreatitis.

	Sensitivity (%)	Specificity (%)
<b>ASGE high probability</b>	60	93.3
<b>ASGE intermediate probability</b>	100	10
<b>ESGE high likelihood</b>	40	96.7
<b>ESGE intermediate likelihood</b>	100	16.7
<b>Common bile duct stone visualized on transabdominal ultrasound</b>	20	96.7
<b>Clinical ascending cholangitis (ASGE)/Features of cholangitis (ESGE)*</b>	40	100
<b>Dilated common bile duct on transabdominal ultrasound plus elevated bilirubin &gt; 68.4 µmol/L</b>	40	96.7
<b>Abnormal liver biochemical tests (ASGE)/Abnormal liver function tests (ESGE)*</b>	100	20
<b>Age over 55</b>	80	36.7
<b>Dilated common bile duct on abdominal ultrasound</b>	50	80

## METHODS

We conducted a prospective observational single center study. Data from 56 patients hospitalized in our tertiary referral center was collected between 7.2.2023 and 22.6.2023.

## RESULTS

Patient flow chart is depicted in Figure 1. Forty patients were included in the final analysis, 10 (25%) had choledocholithiasis (7 confirmed with endoscopic retrograde cholangiopancreatography, 3 with endoscopic ultrasound). Comparison of probability/likelihood groups by both guidelines is presented in Table 2, sensitivity and specificity of groups and single predictors is available in Table 3. As previously, third ASGE high probability predictor (total bilirubin > 68.4  $\mu\text{mol/mL}$  and dilated common bile duct on transabdominal ultrasound) performed poorly, resulting in superior specificity of ESGE high likelihood predictors (93.3% vs 96,7%). More patients were classified as low likeli-

hood by ESGE (3 vs 5). Adherence to ASGE guidelines instead of ESGE would result in 1 unnecessary endoscopic retrograde cholangiopancreatography and 2 unnecessary endoscopic ultrasounds.

## CONCLUSIONS

Our prospective study further suggests that European guidelines outperform American in the sitting of acute biliary pancreatitis.

## References

1. Manes G, Paspatis G, Aabakken L, *et al.* Endoscopic management of common bile duct stones: European Society of Gastrointestinal Endoscopy (ESGE) guideline. *Endoscopy*. 2019;51:472–91. doi: 10.1055/a-0862-0346
2. Buxbaum JL, Abbas Fehmi SM, Sultan S, *et al.* ASCE guideline on the role of endoscopy in the evaluation and management of choledocholithiasis. *Gastrointest Endosc*. 2019;89:1075-1105.e15. doi: 10.1016/j.gie.2018.10.001
3. Černe ŽP, Sever N, Strniša L, *et al.* Performance of European and American Societies of Gastrointestinal Endoscopy Guidelines for Prediction of Choledocholithiasis in Patients with Acute Biliary Pancreatitis. *Med Kaunas Lith*. 2023;59:2176. doi: 10.3390/medicina59122176

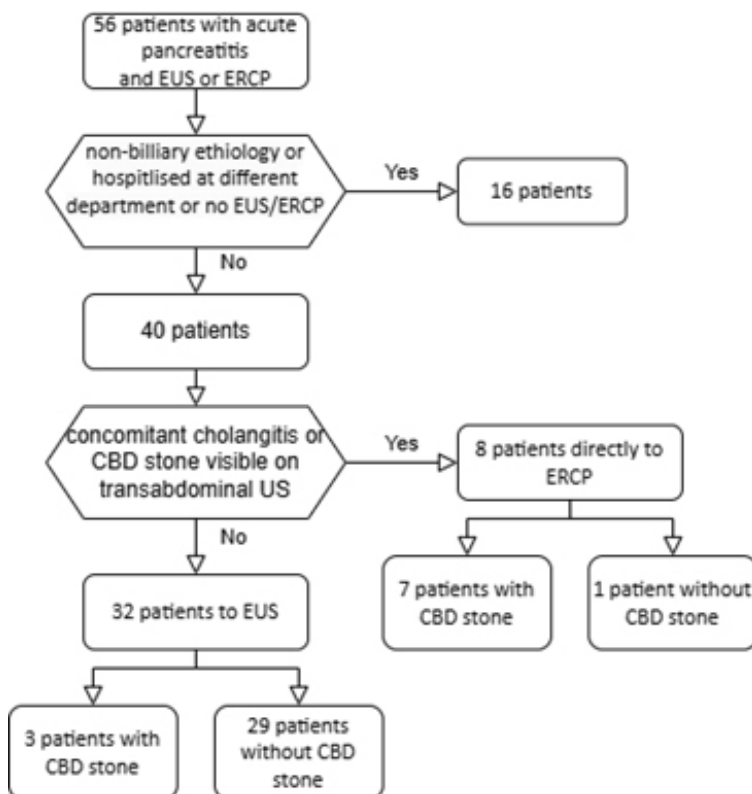


Figure 1: Patient flow chart.