Performance Characteristics of ASGE High-risk Criteria for Diagnosing Common Bile Duct Stone

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Background: Among patients with suspected CBDS, high-risk patients for CBDS should be identified to reduce the risk for endoscopic retrograde cholangiopancreatography (ERCP). The American Society of Gastrointestinal Endoscopy (ASGE) guideline recommends ERCP for patients who meet high-risk criteria for CBDS.

Objective: We aimed to determine the accuracy of the ASGE guideline in high-risk patients for CBDS.

Methods: During May 2016-June 2017, all consecutive patients with suspected CBDS who met at least one of high-risk criteria for CBDS based on ASGE guidelines were prospectively enrolled at our institute. Patients with high-risk criteria were defined as those who had either at least one of very strong predictors (CBDS on transabdominal ultrasound (TUS), clinical ascending cholangitis or total bilirubin (TB) level > 4 mg/dL), or a combination of two strong predictors (TB level > 1.8 plus CBD diameter > 6 mm on TUS) for CBDS. All patients underwent ERCP as the gold standard for diagnosing CBDS with possible CBDS removal. Performance characteristics of each predictor were calculated to determine the accuracy of the guideline.

Results: All 147 patients who met high-risk criteria for CBDS underwent ERCP for diagnosis and possible treatment of CBDS. Of those, 132 (90%) patients had at least one of the very strong predictors; whereas, the remaining had a combination of two strong predictors. Cholangitis was found to be the most common presentation in 93 patients (63%) (Table 1). Of 132 patients who had at least one of very strong predictors, 91 (69%) appeared to have CBDS on ERCP. Of 15 patients who had a combination of two strong predictors, 11 (73%) were found to have CBDS on ERCP. Among very strong predictors, the presence of CBDS on TUS provided the highest specificity and positive predictive value (PPV) (84% and 83%, respectively) (Table 2). A combination of two very strong predictors including the presence of CBDS on TUS plus TB level > 4 mg/dL improved specificity and PPV to 100% and 100%, respectively for the diagnosis of CBDS. However, a combination of other criteria did not increase specificity and PPV for the diagnosis of CBDS.

Conclusion: Based on the ASGE guideline, high-risk criteria can predict the presence of CBDS in 69%. Although the presence of CBDS on TUS offers the highest specificity and PPV for diagnosing CBDS among other very strong predictors, a proposed criteria that include the two very strong predictors including the presence of CBDS on TUS plus TB level > 4 mg/dL can improve the presence for CBDS, and all patients who meet these two criteria must undergo for a therapeutic ERCP.

Keywords: CBD stone, ERCP, ASGE guideline