

Reference

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Evidence-based international recommendations for difficult biliary access

A must-read for endoscopists

Endoscopic retrograde cholangiopancreatography (ERCP) is the preferred treatment for bile duct stones and plays an important role in the management of various diseases of the bile duct and pancreas. The first step in ERCP is advancement of the endoscope to the bile duct opening in the duodenum followed by entry into the bile duct; further endoscopic therapy is then administered. Difficulty achieving biliary access is a commonly encountered challenge, with an estimated incidence of 11% in patients with normal anatomy. In patients with altered anatomy of the gastrointestinal tract due to previous surgeries, the incidence of difficult biliary access is even higher, and special instruments and techniques are often needed. Various approaches are currently used to manage difficult biliary access, including advanced endoscopic

techniques and methods involving specialized endoscopic equipment. However, there is little consensus regarding the optimal approach for each condition that leads to difficult biliary access.

To provide endoscopists with evidence-based recommendations for managing difficult biliary access, researchers from the Department of Internal Medicine of National Taiwan University Hospital organized a panel of leading experts from different countries to review available evidence from existing research and generate consensus recommendations using the modified Delphi method. A total of 13 statements were generated and presented along with corresponding supporting evidence as well as grades for this evidence and the recommendations.

This consensus provides a standardized definition of difficult biliary access as the inability to achieve access via standard ERCP techniques within 10 minutes or up to 5 attempts or failure to access the bile duct opening. An increased risk of post-ERCP pancreatitis with difficult biliary access and the need to implement measures to reduce the risk of pancreatitis are highlighted. For patients with normal anatomy, available salvage techniques and the experts' preferences in various clinical scenarios are discussed in detail, with consideration of success and complication rates. For patients with surgically altered anatomy, the utility of device-assisted enteroscopy and the emerging technique of endoscopic ultrasound-guided biliary access are discussed and compared.

	Difficult cannulation in normal anatomy	Billroth II anatomy	Roux-en-Y anastomosis
Duodenoscope	Yes	Yes	No
Forward-viewing upper endoscope	No	Yes	No
Device-assisted enteroscope	No	Yes (in a long afferent limb)	Yes
EUS-BD	Yes	Yes	Yes
Percutaneous biliary drainage	Yes	Yes	Yes

EUS-BD, EUS-guided biliary drainage.

This consensus provides the first state-of-the-art, evidence-based framework for this challenge that endoscopists encounter in daily practice. Because it may improve patient care and safety, this consensus has been recommended by various journals in medicine/gastroenterology fields as a must-read for endoscopists.

Reference

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Strategies for improving the functionality of zeolitic imidazolate frameworks

Tailoring nanoarchitectures for functional applications

Zeolitic imidazole frameworks (ZIFs), a subclass of metal-organic frameworks (MOFs) built with tetrahedral metal ions and imidazoles, offer permanent porosity and high thermal and chemical stability. While ZIFs possess some attractive physical and chemical properties, it remains important to enhance their functionality for

practical applications. Here, we provide an overview of the extensive strategies that have been developed to improve the functionality of ZIFs, including linker modifications and functional ZIF hybridization via the encapsulation of guest species (e.g., metal and metal oxide NPs and biomolecules).

