

World Journal of *Gastroenterology*

World J Gastroenterol 2024 August 7; 30(29): 3456-3540



EDITORIAL

- 3456 Effective roles of exercise and diet adherence in non-alcoholic fatty liver disease
Zhu W
- 3461 Gastroesophageal reflux following peroral endoscopic myotomy for achalasia: Bumps in the road to success
Itskoviz D, Malnick SDH

ORIGINAL ARTICLE

Observational Study

- 3465 Diagnostic delay in inflammatory bowel diseases in a German population
Blüthner E, Dehe A, Büning C, Siegmund B, Prager M, Maul J, Krannich A, Preiß J, Wiedenmann B, Rieder F, Khedraki R, Tacke F, Sturm A, Schirbel A
- 3479 Prevalence of *Helicobacter pylori* infection among patients with esophageal carcinoma
López-Gómez M, Morales M, Fuerte R, Muñoz M, Delgado-López PD, Gómez-Cerezo JF, Casado E

Basic Study

- 3488 Leech *Poecilobdella manillensis* protein extract ameliorated hyperuricemia by restoring gut microbiota dysregulation and affecting serum metabolites
Liu X, Liang XQ, Lu TC, Feng Z, Zhang M, Liao NQ, Zhang FL, Wang B, Wang LS
- 3511 *Calculus bovis* inhibits M2 tumor-associated macrophage polarization via Wnt/ β -catenin pathway modulation to suppress liver cancer
Huang Z, Meng FY, Lu LZ, Guo QQ, Lv CJ, Tan NH, Deng Z, Chen JY, Zhang ZS, Zou B, Long HP, Zhou Q, Tian S, Mei S, Tian XF

LETTER TO THE EDITOR

- 3534 Defining failure of endoluminal biliary drainage in the era of endoscopic ultrasound and lumen apposing metal stents
Ali FS, Guha S
- 3538 Evaluating the role of large language models in inflammatory bowel disease patient information
Gong EJ, Bang CS

ABOUT COVER

Editorial Board Member of *World Journal of Gastroenterology*, Fabio Grizzi, PhD, Head, Histology Core, IRCCS Humanitas Research Hospital, Via Manzoni 56, Rozzano 20089, Milan, Italy. fabio.grizzi@humanitasresearch.it

AIMS AND SCOPE

The primary aim of *World Journal of Gastroenterology* (WJG, *World J Gastroenterol*) is to provide scholars and readers from various fields of gastroenterology and hepatology with a platform to publish high-quality basic and clinical research articles and communicate their research findings online. WJG mainly publishes articles reporting research results and findings obtained in the field of gastroenterology and hepatology and covering a wide range of topics including gastroenterology, hepatology, gastrointestinal endoscopy, gastrointestinal surgery, gastrointestinal oncology, and pediatric gastroenterology.

INDEXING/ABSTRACTING

The WJG is now abstracted and indexed in Science Citation Index Expanded (SCIE), MEDLINE, PubMed, PubMed Central, Scopus, Reference Citation Analysis, China Science and Technology Journal Database, and Superstar Journals Database. The 2024 edition of Journal Citation Reports® cites the 2023 journal impact factor (JIF) for WJG as 4.3; Quartile: Q1. The WJG's CiteScore for 2023 is 7.8.

RESPONSIBLE EDITORS FOR THIS ISSUE

Production Editor: *Hua-Ge Yu*; Production Department Director: *Xu Guo*; Cover Editor: *Jia-Ru Fan*.

NAME OF JOURNAL

World Journal of Gastroenterology

ISSN

ISSN 1007-9327 (print) ISSN 2219-2840 (online)

LAUNCH DATE

October 1, 1995

FREQUENCY

Weekly

EDITORS-IN-CHIEF

Andrzej S Tarnawski

EXECUTIVE ASSOCIATE EDITORS-IN-CHIEF

Xian-Jun Yu (Pancreatic Oncology), Jian-Gao Fan (Chronic Liver Disease), Hou-Bao Liu

EDITORIAL BOARD MEMBERS

<http://www.wjgnet.com/1007-9327/editorialboard.htm>

PUBLICATION DATE

August 7, 2024

COPYRIGHT

© 2024 Baishideng Publishing Group Inc

PUBLISHING PARTNER

Shanghai Pancreatic Cancer Institute and Pancreatic Cancer Institute, Fudan University
Biliary Tract Disease Institute, Fudan University

INSTRUCTIONS TO AUTHORS

<https://www.wjgnet.com/bpg/gerinfo/204>

GUIDELINES FOR ETHICS DOCUMENTS

<https://www.wjgnet.com/bpg/GerInfo/287>

GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH

<https://www.wjgnet.com/bpg/gerinfo/240>

PUBLICATION ETHICS

<https://www.wjgnet.com/bpg/GerInfo/288>

PUBLICATION MISCONDUCT

<https://www.wjgnet.com/bpg/gerinfo/208>

POLICY OF CO-AUTHORS

<https://www.wjgnet.com/bpg/GerInfo/310>

ARTICLE PROCESSING CHARGE

<https://www.wjgnet.com/bpg/gerinfo/242>

STEPS FOR SUBMITTING MANUSCRIPTS

<https://www.wjgnet.com/bpg/GerInfo/239>

ONLINE SUBMISSION

<https://www.f6publishing.com>

PUBLISHING PARTNER's OFFICIAL WEBSITE

<https://www.shca.org.cn>
<https://www.zs-hospital.sh.cn>



Defining failure of endoluminal biliary drainage in the era of endoscopic ultrasound and lumen apposing metal stents

Faisal S Ali, Sushovan Guha

Specialty type: Gastroenterology and hepatology

Provenance and peer review: Invited article; Externally peer reviewed.

Peer-review model: Single blind

Peer-review report's classification

Scientific Quality: Grade C

Novelty: Grade B

Creativity or Innovation: Grade B

Scientific Significance: Grade B

P-Reviewer: Nicolae N

Received: April 8, 2024

Revised: May 12, 2024

Accepted: July 18, 2024

Published online: August 7, 2024

Processing time: 111 Days and 21.4 Hours



Faisal S Ali, Department of Gastroenterology, Hepatology, and Nutrition, University of Texas Health Science Center at Houston, Houston, TX 77054, United States

Sushovan Guha, Department of Clinical Sciences, Tilman J. Fertitta Family College of Medicine, University of Houston, Houston, TX 77204, United States

Corresponding author: Sushovan Guha, MD, PhD, AGAF, FASGE, Professor, Department of Clinical Sciences, Tilman J. Fertitta Family College of Medicine, University of Houston, 5055 Medical Cir, Houston, TX 77204, United States. sguha@hrgastro.com

Abstract

The role of endoscopy in pathologies of the bile duct and gallbladder has seen notable advancements over the past two decades. With advancements in stent technology, such as the development of lumen-apposing metal stents, and adoption of endoscopic ultrasound and electrosurgical principles in therapeutic endoscopy, what was once considered endoscopic failure has transformed into failure of an approach that could be salvaged by a second- or third-line endoscopic strategy. Incorporation of these advancements in routine patient care will require formal training and multidisciplinary acceptance of established techniques and collaboration for advancement of experimental techniques to generate robust evidence that can be utilized to serve patients to the best of our ability.

Key Words: Endoscopic ultrasound; Guided biliary drainage; Gallbladder; Biliary obstruction; Lumen-apposing metal stent

©The Author(s) 2024. Published by Baishideng Publishing Group Inc. All rights reserved.

Core Tip: For malignant distal biliary obstruction, endoscopic ultrasound (EUS)-guided choledochoduodenostomy is noninferior to endoscopic retrograde cholangiopancreatography (ERCP) with biliary stent placement, and can be considered as a primary drainage modality instead of a salvage method. In cases with malignant hilar biliary obstruction, combined ERCP with EUS-biliary drainage (CERES), when performed in the appropriate patient, can not only provide bilateral drainage but also establish communication of the right and left intrahepatic biliary systems through bridging intra-hepatic stenting. EUS-guided gallbladder drainage (EUS-GBD) is increasingly being recognized as a feasible and efficacious treatment modality and should be considered in the management of cholecystitis in a multidisciplinary setting. EUS-GBD can also be incorporated in the algorithm of management of distal or hilar biliary obstruction, either as a prophylactic or a therapeutic strategy.

Citation: Ali FS, Guha S. Defining failure of endoluminal biliary drainage in the era of endoscopic ultrasound and lumen apposing metal stents. *World J Gastroenterol* 2024; 30(29): 3534-3537

URL: <https://www.wjgnet.com/1007-9327/full/v30/i29/3534.htm>

DOI: <https://dx.doi.org/10.3748/wjg.v30.i29.3534>

TO THE EDITOR

Biliary interventional endoscopy refers to the ability to treat pathologies of the biliary tract through a non-surgical, endoluminal approach. The availability of fluoroscopy, coupled with endoscopic ability to access the biliary system through the ampulla of Vater, gave rise to the now well-established modality, endoscopic retrograde cholangiopancreatography (ERCP)[1]. As expertise with ERCP grew, our ability to treat and palliate expanded to encompass pathologies of the biliary system which were historically managed with surgery. While this opened new avenues, it also unveiled new challenges that highlighted the need to evolve beyond ERCP through technological innovation and novel thought to address unmet needs of patients with limited options for management of their malady. This milieu led to innovations such as endoscopic ultrasound (EUS) and development of the lumen-apposing metal stent (LAMS), both major milestones which continue to improve our ability to manage biliary pathologies.

Traditionally, failure of endoscopic biliary drainage meant failure of ERCP, subjecting patients to percutaneous biliary drainage (PTBD). Although PTBD is a valuable treatment option, one could argue that it adversely impacts patients' quality of life due to its external attachments. In the current era, the availability of EUS and LAMS have served to redefine failure of endoscopic biliary drainage, as has been highlighted by Fugazza *et al*[2], who shed light on the role of EUS-guided biliary drainage (EUS-BD) in the management of gallbladder and biliary tree pathologies.

In malignant distal biliary obstruction (MDBO), EUS-choledochoduodenostomy (EUS-CDS) historically served as a salvage modality in the setting of ERCP failure. This stepwise approach allowed expansion of endoscopic techniques available for biliary decompression in patients with MDBO. As experience with EUS-CDS grew, its technical equivalency to ERCP in the setting of MDBO became evident; EUS-CDS has now been shown to be noninferior to ERCP in the ELEMENT and DRA-MBO clinical trials[3,4], and as such one may perform EUS-CDS as a primary drainage modality in appropriately selected patients. The question of cost-effectiveness of EUS-CDS as a primary drainage modality compared to ERCP in MDBO remains to be answered. In countries where LAMS are unavailable, EUS-BD still serves a useful purpose in the setting of MDBO by providing rendezvous access to allow transpapillary biliary drainage, particularly when MDBO leads to ampullary distortion.

In cases with malignant hilar biliary obstruction (MHBO), EUS-BD can serve as an adjuvant drainage modality that is to be used alongside ERCP; the utility of combined ERCP with EUS-BD (CERES) allows applicability of EUS-BD in multiple configurations (Figure 1)[5,6]. The techniques of EUS-BD studied in the setting of MHBO can serve to prolong the efficacy of endoscopic biliary drainage, potentially delaying PTBD in appropriately selected patients, thereby preserving their quality of life. EUS-BD can also establish bilateral drainage of the liver in cases with high grade MHBO with non-communicating left and right biliary systems by performing bridging intra-hepatic stenting along with a hepaticogastrostomy[7]. Put together, these are promising avenues that warrant further exploration in randomized trials to validate the utility of EUS-BD in MHBO as has been done in the setting of MDBO.

The presence or absence of gallbladder can materially alter the course of management in the setting of biliary obstruction. In the case of both MDBO and MHBO, EUS-guided gallbladder drainage (EUS-GBD) can be performed prophylactically or therapeutically. Preliminary data on EUS-GBD addressed the utility of this technique as a rescue modality, with promising results, as summarized by Fugazza *et al*[2]. Similar to EUS-BD, the role of EUS-GBD has evolved beyond a rescue technique and carries the potential to be incorporated in the algorithm of biliary drainage in malignant cases as a prophylactic measure. Such an approach may be of utility in cases where biliary stent placement poses the risk of cystic duct obstruction and cholecystitis; in cases with MHBO, incorporating EUS-GBD can be considered an extension of CERES, allowing bilateral drainage of the biliary tree, and maintaining gallbladder outflow. The utility of EUS-GBD has been shown primarily in the setting of cholecystitis, particularly for patients who are unfit for surgery. In the current era, incorporation of a multidisciplinary team consisting of surgeons, interventional radiologists, and interventional endoscopists to drive therapeutic decision-making in the setting of acute cholecystitis should be considered standard practice in resource-rich health systems and tertiary care centers, and will serve to increase adoption of EUS-GBD in appropriately selected patients (Figure 2)[8]. Lithotripsy after EUS-GBD in patients with cholelithiasis is an additional

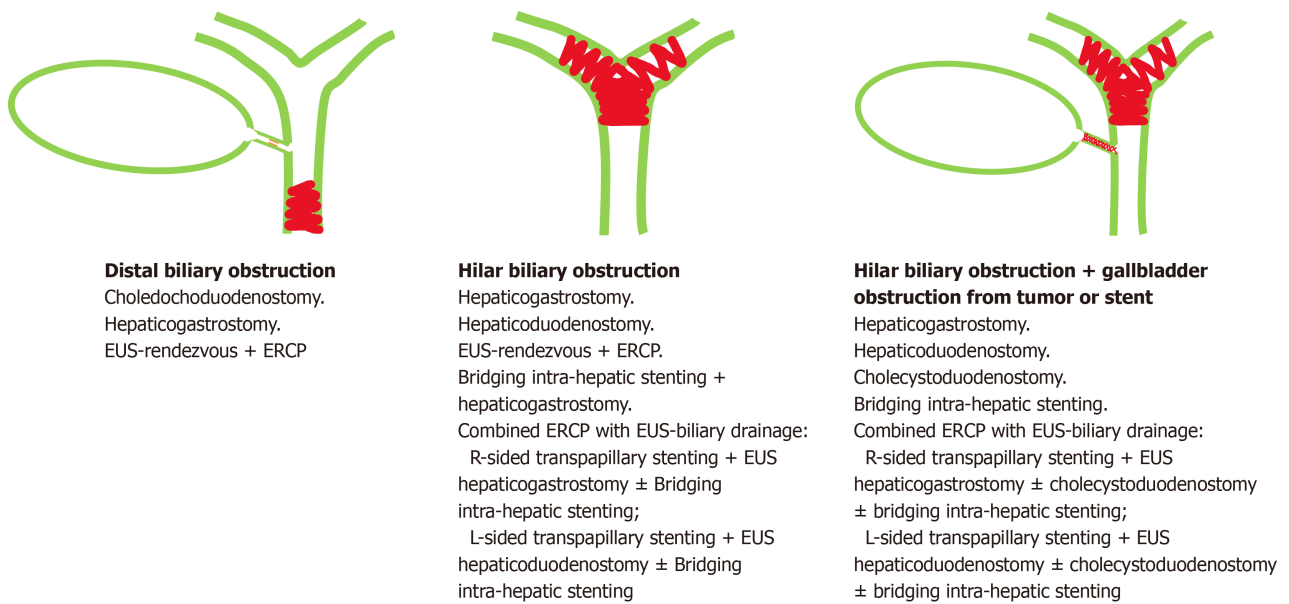


Figure 1 Role of endoscopic ultrasound-guided biliary drainage in various forms of obstruction. EUS: Endoscopic ultrasound; ERCP: Endoscopic retrograde cholangiopancreatography.

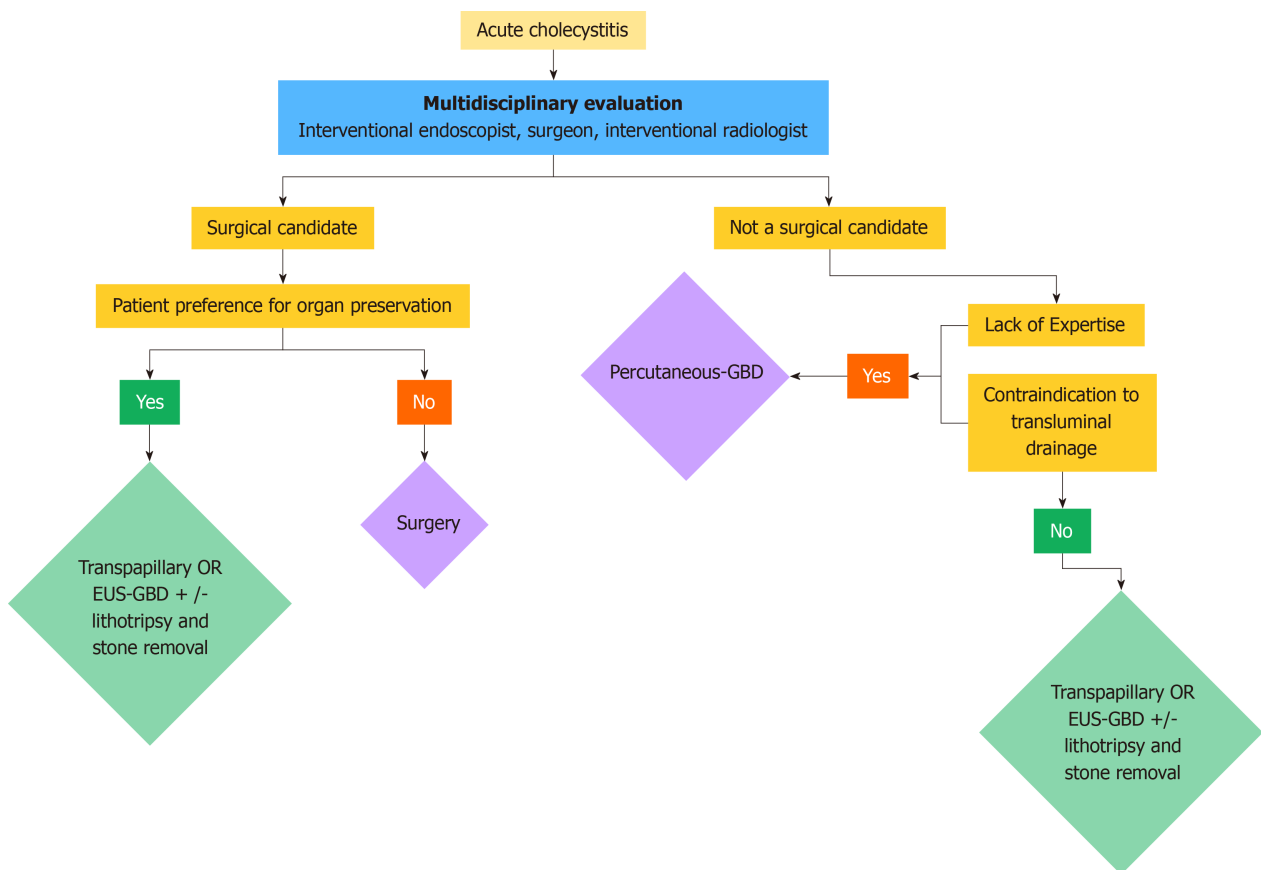


Figure 2 Potential approach to multidisciplinary management of acute cholecystitis. EUS: Endoscopic ultrasound; GBD: Gallbladder drainage.

treatment strategy that is currently in its infancy but will undoubtedly be explored in a robust manner in the near future [9]. Above all, long-term safety, reproducibility, and the ability to train proceduralists in these evolving techniques will be paramount in driving progress of therapeutic biliary endoscopy.

CONCLUSION

As the armamentarium of interventional endoscopy continues to grow, the definition of “failure” as it pertains to the ability to achieve endobiliary drainage will continue to evolve to the point where a majority of patients can be offered one of the many potential therapeutic modalities to achieve adequate biliary drainage, be it through the biliary tree or the gallbladder.

FOOTNOTES

Author contributions: Ali FS drafted the manuscript; Ali FS and Guha S contributed to the inception; Guha S participated in the final approval of this manuscript.

Conflict-of-interest statement: All the authors report no relevant conflicts of interest for this article.

Open-Access: This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <https://creativecommons.org/licenses/by-nc/4.0/>

Country of origin: United States

ORCID number: Faisal S Ali 0000-0001-7372-5158; Sushovan Guha 0009-0001-5954-3603.

S-Editor: Wang JJ

L-Editor: A

P-Editor: Zhao YQ

REFERENCES

- 1 **Fujita R.** The History of ERCP and EUS. In: Mine T, Fujita R. Advanced Therapeutic Endoscopy for Pancreatico-Biliary Diseases. Tokyo: Springer, 2019
- 2 **Fugazza A,** Khalaf K, Pawlak KM, Spadaccini M, Colombo M, Andreozzi M, Giacchetto M, Carrara S, Ferrari C, Binda C, Mangiavillano B, Anderloni A, Repici A. Use of endoscopic ultrasound-guided gallbladder drainage as a rescue approach in cases of unsuccessful biliary drainage. *World J Gastroenterol* 2024; **30**: 70-78 [PMID: 38293324 DOI: 10.3748/wjg.v30.i1.70]
- 3 **Chen YI,** Sahai A, Donatelli G, Lam E, Forbes N, Mosko J, Paquin SC, Donnellan F, Chatterjee A, Telford J, Miller C, Desilets E, Sandha G, Kenshil S, Mohamed R, May G, Gan I, Barkun J, Calo N, Nawawi A, Friedman G, Cohen A, Maniere T, Chaudhury P, Metrakos P, Zogopoulos G, Bessissow A, Khalil JA, Baffis V, Waschke K, Parent J, Soulellis C, Khashab M, Kunda R, Geraci O, Martel M, Schwartzman K, Fiore JF Jr, Rahme E, Barkun A. Endoscopic Ultrasound-Guided Biliary Drainage of First Intent With a Lumen-Apposing Metal Stent vs Endoscopic Retrograde Cholangiopancreatography in Malignant Distal Biliary Obstruction: A Multicenter Randomized Controlled Study (ELEMENT Trial). *Gastroenterology* 2023; **165**: 1249-1261.e5 [PMID: 37549753 DOI: 10.1053/j.gastro.2023.07.024]
- 4 **Teoh AYB,** Napoleon B, Kunda R, Arcidiacono PG, Kongkam P, Larghi A, Van der Merwe S, Jacques J, Legros R, Thawee RE, Saxena P, Aerts M, Archibugi L, Chan SM, Fumex F, Kaffes AJ, Ma MTW, Messaoudi N, Rizzatti G, Ng KKC, Ng EKW, Chiu PWY. EUS-Guided Choledochoduodenostomy Using Lumen Apposing Stent Versus ERCP With Covered Metallic Stents in Patients With Unresectable Malignant Distal Biliary Obstruction: A Multicenter Randomized Controlled Trial (DRA-MBO Trial). *Gastroenterology* 2023; **165**: 473-482.e2 [PMID: 37121331 DOI: 10.1053/j.gastro.2023.04.016]
- 5 **Sundaram S,** Dhir V. EUS-guided biliary drainage for malignant hilar biliary obstruction: A concise review. *Endosc Ultrasound* 2021; **10**: 154-160 [PMID: 34137381 DOI: 10.4103/EUS-D-21-00004]
- 6 **Kongkam P,** Tasneem AA, Rerknimitr R. Combination of endoscopic retrograde cholangiopancreatography and endoscopic ultrasonography-guided biliary drainage in malignant hilar biliary obstruction. *Dig Endosc* 2019; **31** Suppl 1: 50-54 [PMID: 30994233 DOI: 10.1111/den.13371]
- 7 **Nakai Y,** Kogure H, Isayama H, Koike K. Endoscopic Ultrasound-Guided Biliary Drainage for Unresectable Hilar Malignant Biliary Obstruction. *Clin Endosc* 2019; **52**: 220-225 [PMID: 30472818 DOI: 10.5946/ce.2018.094]
- 8 **Irani SS,** Sharzei K, Siddiqui UD. AGA Clinical Practice Update on Role of EUS-Guided Gallbladder Drainage in Acute Cholecystitis: Commentary. *Clin Gastroenterol Hepatol* 2023; **21**: 1141-1147 [PMID: 36967319 DOI: 10.1016/j.cgh.2022.12.039]
- 9 **Quoraishi S,** Ahmed J, Ponsford A, Rasheed A. Lessons learnt from a case of extracorporeal shockwave lithotripsy for a residual gallbladder stone. *Int J Surg Case Rep* 2017; **32**: 43-46 [PMID: 28235649 DOI: 10.1016/j.ijscr.2017.02.001]



Published by **Baishideng Publishing Group Inc**
7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA

Telephone: +1-925-3991568

E-mail: office@baishideng.com

Help Desk: <https://www.f6publishing.com/helpdesk>

<https://www.wjgnet.com>

