

World Journal of *Gastrointestinal Surgery*

Monthly Volume 18 Number 1 January 27, 2026



World Journal of *Gastrointestinal Surgery*

Editorial Board

2026-2029

Published by **Baishideng Publishing Group Inc**
7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA
<https://www.wjgnet.com>

The *World Journal of Gastrointestinal Surgery* Editorial Board Members are composed of 115 distinguished experts active in the relevant field, distributed in 29 countries/regions, including China (25), Italy (20), Japan (11), India (8), Türkiye (7), Taiwan (3), South Korea (3), Spain (3), Greece (3), Romania (3), France (3), Germany (2), Australia (2), Brazil (2), Croatia (2), Lithuania (2), Switzerland (2), Saudi Arabia (2), Singapore (2), Slovenia (1), Thailand (1), United Kingdom (1), United States (1), Malaysia (1), Poland (1), Russia (1), Israel (1), Denmark (1), and Egypt (1).

Editor-in-Chief

Eva Lieto, MD, PhD, Assistant Professor, (E-mail: eva.lieto@unicampania.it) Traslazional Medicine, Vanvitelli University, Napoli, NA 80132, Italy

Senior Editorial Board

Chen-Guo Ker, MD, PhD, Professor, Department of Surgery, E-Da Hospital, I-Shou University, Kaohsiung 824, Taiwan

Shu-You Peng, MD, Professor, Department of Hepatobiliary and Pancreatic Surgery, The Second Affiliated Hospital of Zhejiang University School of Medicine, Hangzhou 310006, Zhejiang Province, China

Peter Schemmer, MD, Professor, Bern Visceral Surgery and Pancreas Clinic Switzerland and Liver Clinic Switzerland, Hirslanden Hospital Beau-Site, Bern 3013, Switzerland

Associate Editor

Vishal G Shelat, Associate Professor, Department of Surgery, Tan Tock Seng Hospital, Singapore 308433, Singapore

Editorial Board

Anil Kumar Agarwal, FACS, FRCS (Hon), Director, Professor, Department of Gastrointestinal Surgery and Liver Transplant, GB Pant Institute of Postgraduate Medical Education and Research and Maulana Azad Medical College, Delhi University, New Delhi 110002, India

Sami Akbulut, MD, PhD, Full Professor, Department of Surgery and Liver Transplant Institute, Inonu University Faculty of Medicine, Malatya 44280, Türkiye

Ali Aktekin, MD, Professor, Department of General Surgery, Medical Faculty, Giresun University, Giresun 28200, Türkiye

Ruslan Alikhanov, MD, PhD, Chairman, Professor, Division of Liver and Pancreatic Surgery, Moscow Clinical Research Center, Moscow 111123, Russia

Michele Ammendola, MD, Science of Health Department, Digestive Surgery Unit, University of "Magna Graecia" Medical School, Catanzaro 88100, Italy

Goran Augustin, MD, PhD, Associate Professor, Department of Surgery, University Hospital Centre Zagreb, Zagreb 10000, Croatia

Fabio Ausania, MD, PhD, Department of Hepato-Pancreato-Biliary and Transplant Surgery, Hospital Clinic, Barcelona 08036, Spain

Sung Uk Bae, MD, PhD, Associate Professor, Department of Surgery, Keimyung University Dongsan Hospital, Daegu 42601, South Korea

Ahmet Ziya Balta, MD, Associate Professor, Department of Surgery, Health Sciences University, Abdulhamid Han Teaching and Research Hospital, Istanbul 34668, Türkiye

Giedrius Barauskas, MD, PhD, Professor, Department of Surgery, Lithuanian University of Health Sciences, Kaunas LT-50009, Lithuania

Savio George Alberto Da Piedade Barreto, MD, PhD, Department of Surgery, Flinders Medical Centre, Daw Park, South Australia 5041, Australia

Lapo Bencini, PhD, Senior Researcher, Department of Surgical Oncology, Careggi University and District Hospital, Careggi Main Florence University and Regional Hospital, Florence 50134, Italy

Vasile Virgil Bintintan, MD, PhD, Senior Researcher, Department of Surgery, "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca, Cluj Napoca 400006, Romania

Dieter Clemens Broering, FACS, MD, PhD, Director, Full Professor, Senior Researcher, Organ Transplant Center of Excellence, King Faisal Specialist Hospital and Research Center, Riyadh 11211, Saudi Arabia

Ramón Cantero, MD, PhD, Associate Professor, Department of Surgery, La Paz University Hospital, Pozuelo de Alarcon, Madrid 28223, Spain

Damiano Caputo, FACS, MD, Associate Professor, Department of General Surgery, Università Campus Bio-Medico di Roma, Rome 00128, Italy

Andrea Cavallaro, PhD, MD, Research Assistant Professor, Department of Surgery and Medical Surgical Specialties, University of Catania, Via S. Sofia 78, Catania 95123, Italy

Mustafa Cengiz, MD, Associate Professor, Department of Gastroenterology, Gulhane Training and Research Hospital-University of Health Sciences, Ankara 06010, Türkiye

Kun-Ming Chan, MD, Professor, Senior Researcher, Department of General Surgery and Chang Gung Transplantation Institute, Chang Gung Memorial Hospital at Linkou, Chang Gung University College of Medicine, Taoyun 33305, Taiwan

Nikolaos Chatzizacharias, MD, PhD, Associate Professor, Department of HPB and Liver Transplantation, Queen Elizabeth Hospital, University Hospitals Birmingham, Birmingham B15 2TH, United Kingdom

Marcio Chedid, MD, PhD, Professor, Liver Transplant and Hepatobiliary Surgery Unit, Hospital de Clinicas de Porto Alegre, Porto Alegre 90035-903, Brazil

Chong-Chi Chiu, MD, Professor, Department of General Surgery, School of Medicine, College of Medicine, E-Da Cancer Hospital, I-Shou University, Kaohsiung 82445, Taiwan

Ali Coskun, MD, Associate Professor, Department of General Surgery, Izmir Bozyaka Training and Research Hospital, Izmir 35380, Türkiye

Fabrizio D'Acapito, PhD, MD, Associate Professor, Department of General and Oncologic Surgery, Morgagni-Pierantoni Hospital, AUSL Romagna, Forlì 47121, Italy

Osman Nuri Dilek, FACS, Professor, Department of Surgery, Division of Hepatopancreatobiliary Surgery, Izmir Katip Çelebi University School of Medicine, Izmir 35150, Türkiye

Lei Ding, PhD, MD, Professor, Department of Colorectal Oncology, Beijing Shijitan Hospital, Capital Medical University Ninth School of Clinical Medicine, Beijing 100038, China

Ze-Yang Ding, MD, PhD, Professor, Hepatic Surgery Centre, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430030, Hubei Province, China; Hubei Key Laboratory of Hepato-Pancreato-Biliary Diseases, Wuhan 430030, Hubei Province, China

Marcello Donati, FACS, MD, PhD, Professor, Department of Surgery and Medical-Surgical Specialties, University of Catania, Catania 95125, Italy

Alaa El-Hussuna, PhD, Department of Surgery, Aalborg University Hospital, Aalborg 9000, Denmark

Sameh Hany Emile, FACS, MD, PhD, Associate Professor, Department of General Surgery, Mansoura University, Mansoura University Hospitals, Mansoura, Dakahlia 35516, Egypt

Shunji Endo, MD, PhD, Associate Professor, Department of Digestive Surgery, Kawasaki Medical School, Kurashiki, Okayama 701-0192, Japan

Ying Fan, PhD, Professor, Department of General Surgery, Shengjing Hospital of China Medical University, Shenyang 110004, Liaoning Province, China

Marco Frascio, MD, Professor, Dipartimento di Scienze Chirurgiche e Diagnostiche Integrate, University of Genova-School of Medicine, Genova 16131, Italy

Tao Fu, MD, Associate Professor, Chief Physician, Director, Department of Gastrointestinal Surgery II, Wuhan University, Wuhan 430060, Hubei Province, China

Shiki Fujino, FACS, MD, PhD, Innovative Oncology Research and Regenerative Medicine, Osaka International Cancer Institute, Osaka 541-8567, Japan

Naotake Funamizu, FACS, MD, PhD, Assistant Professor, Department of HBP Surgery, Ehime University, Toon, Ehime 7910204, Japan

Gaetano Gallo, MD, PhD, Professor, Department of Surgery, University of Rome, Rome 00161, Italy

Gianpiero Gravante, FRCS (Ed), MD, PhD, Consultant, Department of General Surgery, Azienda Sanitaria Locale (ASL) Lecce, Ospedale Francesco Ferrari-Viale Francesco Ferrari 1, Casarano 73042, Lecce, Italy

Andrew Gumbs, FACS, MD, Full Professor, Professor, Department of Surgical Oncology, Centre Hospitalier Intercommunal Poissy/Saint-Germain-en-Laye, Poissy 78300, France

Vishal Gupta, FACS, Additional Professor, Department of Surgical Gastroenterology, All India Institute of Medical Sciences, Bhopal 462020, India

Jia-Gang Han, MD, Professor, Department of General Surgery, Beijing Chaoyang Hospital, Capital Medical University, Beijing 100020, China

Eva Intagliata, MD, PhD, Professor, Department of Surgery, University of Catania, Augusta 96011, Italy

Orestis Ioannidis, MD, PhD, Assistant Professor, Fourth Surgical Department, Medical School, Aristotle University of Thessaloniki, Thessaloniki 54640, Greece

Arda Isik, FACS, MD, PhD, Professor, Department of General Surgery, Pittsburgh University, Magee Womens Hospital, Pittsburgh, PA 15213, United States

Martellucci Jacopo, MD, PhD, Department of Emergency Surgery, Careggi University Hospital, Florence 50134, Italy

Yan Jiao, PhD, Associate Professor, Department of Hepatobiliary and Pancreatic Surgery, First Hospital of Jilin University, Changchun 130000, Jilin Province, China

Cheng Jin, PhD, Director, Department of General Surgery, The Hospital of Xidian Group, Xi'an 710077, Shaanxi Province, China

Raja Kalayarasan, Additional Professor, Department of Surgical Gastroenterology, Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Puducherry 605006, India

Piotr Kalinowski, MD, PhD, Assistant Professor, Department of General, Transplant and Liver Surgery, Medical University of Warsaw, Warsaw 02-097, Poland

Burhan Hakan Kanat, MD, Associate Professor, Department of General Surgery, Malatya Turgut Özal University, Malatya 44300, Türkiye

Bum-Soo Kim, MD, PhD, Professor, Department of Surgery, School of Medicine, Kyung Hee University, Seoul 130-702, South Korea

Boris Kirshtein, MD, Professor, Department of Surgery A, Soroka University Medical Center, Beer Sheva 84101, Israel

Katerina Kotzampassi, MD, PhD, Professor, 1st Propaedeutic Department of Surgery, AHEPA University Hospital, Aristotle University of Thessaloniki, Thessaloniki 54632, Greece

Kazuo Koyanagi, FACS, MD, PhD, Professor, Department of Gastroenterological Surgery, Tokai University School of Medicine, Isehara 259-1193, Japan

Ashok Kumar, FACS, FASCRS, FRCS, FRCS (Ed), Professor, Department of Surgical Gastroenterology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, Uttar Pradesh 226014, India

Andrea Lauterio, Associate Professor, Department of Medicine and Surgery, University of Milan-Bicocca, Piazza dell'Ateneo Nuovo, Milano 1-20126, Italy

Suk-Hwan Lee, MD, Professor, Department of Surgery, Kyung Hee University, School of Medicine, Seoul 05278, South Korea

Jiang-Tao Li, MD, Professor, Department of Hepatobiliary and Pancreatic Surgery, The Second Affiliated Hospital of Zhejiang University School of Medicine, Hangzhou 310009, Zhejiang Province, China

Qi Ling, MD, PhD, Professor, Department of Surgery, The First Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou 310003, Zhejiang Province, China

Karl-Heinrich Link, MD, Emeritus Professor, Professor, Research Group Oncology of Gastrointestinal Tumors (FOGT), University of Ulm, Ulm 89081, Germany

Ya-Hui Liu, MD, PhD, Professor, Department of Hepatobiliary and Pancreatic Surgery, General Surgery Center, The First Hospital of Jilin University, Changchun 130021, Jilin Province, China

Liang Liu, MD, Professor, Department of Pancreatic Surgery, Zhongshan Hospital, Shanghai 200032, China

Yang Liu, MD, Associate Professor, Department of Thyroid and Bariatric Surgery, Xi'an Jiaotong University Second Affiliated Hospital, Xi'an 710114, Shaanxi Province, China

Varut Lohsiriwat, MD, PhD, Professor, Colorectal Surgery Unit, Department of Surgery, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand

Benedetto Mangiavillano, MD, Adjunct Professor, Department of Gastrointestinal Endoscopy, Humanitas - Mater Domini, Castellanza (VA) 20153, Italy

Aleix Martínez-Pérez, MD, PhD, Associate Professor, Senior Researcher, Faculty of Health Sciences, Valencian International University, Calle Pintor Sorolla 21, Valencia 46002, Spain

Francesco Martini, MD, Digestive and Bariatric Surgery Department, Clinique des Cedres, Cornebarrieu, Midi-Pyrenees 31705, France

Zu-Bing Mei, MD, PhD, Assistant Professor, Department of Anorectal Surgery, Shuguang Hospital Affiliated to Shanghai University of Traditional Chinese Medicine, Shanghai 201203, China

Abdul-Wahed Nasir Meshikhes, FRCS (Gen Surg), Department of Surgery, Alzahra General Hospital, Qatif 31911, Saudi Arabia

Jeremy Meyer, MD, PhD, Division of Digestive Surgery, University Hospitals of Geneva, Geneva 1205, Switzerland

Danko Mikulic, MD, PhD, Assistant Professor, Department of Surgery, University Hospital Merkur, Zagreb 10000, Croatia

Federico Mocchegiani, MD, Associate Professor, Unit of Hepato-pancreato-biliary and Transplant Surgery, Department of Experimental and Clinical Medicine, Polytechnic University of Marche, Ancona 60126, Italy

Mario Musella, MD, Associate Professor, Professor, Advanced Biomedical Sciences Department, Univ Naples Federico II, Naples 80131, Italy

Ionut Negoii, MD, PhD, Associate Professor, Department of General Surgery, Carol Davila University of Medicine and Pharmacy Bucharest, Clinical Emergency Hospital of Bucharest, No. 8 Floreasca Street, Sector 1, Bucharest 014461, Romania

Koichi Okamoto, MD, PhD, Associate Professor, Department of General and Digestive Surgery, Kanazawa Medical University, No. 1-1 Daigaku, Uchinadamachi, Kahoku, Ishikawa 920-0293, Japan

Jing-Hua Pan, PhD, Associate Professor, Department of General Surgery, The First Affiliated Hospital of Jinan University, No. 613 Huangpu Da Dao Xi, Tianhe District, Guangzhou 510632, Guangdong Province, China

Theodoros E Pavlidis, MD, PhD, Emeritus Professor, 2nd Surgical Proppedeutic Department, Hippocraton Hospital, School of Medicine, Aristotle University of Thessaloniki, Thessaloniki 54642, Greece

Roberto Peltrini, MD, PhD, Research Fellow, Department of Public Health, University of Naples Federico II, NO.5 Via Pansini, Naples 80131, Italy

Niccolo Petrucciani, MD, PhD, Assistant Professor, Senior Postdoctoral Fellow, Digestive Surgery and Liver Transplantation, Henri Mondor University Hospital, UPEC University, Creteil 94000, France

Renato Pietroletti, PhD, Associate Professor, Professor, Department of Applied Clinical and Biotechnological Sciences, University of L'Aquila, L'Aquila, AQ 67100, Italy

Tomas Poskus, MD, PhD, Professor, Institute of Clinical Medicine, Clinic of Gastroenterology, Nephrourology and Surgery, Faculty of Medicine, Vilnius University, Vilnius 08661, Lithuania

Arun Prasad, FACS, FRCS (Ed), FRCS (Gen Surg), Adjunct Professor, Professor, Department of Minimal Access, Thoracoscopic, Bariatric and Robotic Surgery, Apollo Hospital, New Delhi 110044, India

Ajaz Ahmad Rather, FACS, FRCS (Ed), Professor, Department of Surgery, SKIMS Medical College, Srinagar, Jammu and Kashmir 190012, India

Katsunori Sakamoto, FACS, MD, PhD, Assistant Professor, Department of Hepatic-Biliary-Pancreatic and Breast Surgery, Ehime University Graduate School Medicine, Toon, Ehime 791-0295, Japan

Francis Seow-Choen, Professor, Department of Colorectal Surgery, Singapore General Hospital, Singapore 169608, Singapore

Omar J Shah, FRCS (Ed), MD, Professor, Department of Surgical Gastroenterology/Dean Medical Faculty SKIMS, Sher-i-Kashmir Institute of Medical Sciences, Srinagar, JK 191121, India

- Junichi Shindoh, MD, PhD, Chief Physician**, Division of Hepatobiliary-pancreatic Surgery, Toranomon Hospital, Tokyo 105-8470, Japan
- Leonardo Solaini, MD, Assistant Professor**, Department of Surgery, Morgagni-Pierantoni Hospital, Forli 47121, Italy
- Yu-Hu Song, MD, PhD, Full Professor**, Department of Gastroenterology, Union Hospital, Tongji Medical College, HUST, Wuhan 430022, Hubei Province, China
- Yu-Ling Sun, PhD, Professor**, Departments of Hepatobiliary and Pancreatic Surgery, First Affiliated Hospital of Zhengzhou University, Zhengzhou 450052, Henan Province, China
- Valeriu Marin Şurlin, MD, PhD, Professor**, Department of Surgery, University of Medicine and Pharmacy of Craiova, Craiova, Dolj 200391, Romania
- Kazuhiro Takahashi, MD, PhD, Assistant Professor**, Department of Surgery, Faculty of Medicine, University of Tsukuba, Tsukuba, Ibaraki Prefecture 305-8575, Japan
- Nobuyuki Takemura, MD, PhD, Professor**, Department of Hepato-Biliary-Pancreatic Surgery and Pediatric Surgery, Saitama Medical Center, Saitama Medical University, 1981 Kamoda, Kawagoe-shi, Saitama 350-8550, Japan
- Yan-Tao Tian, MD, PhD, Professor**, Department of Pancreatic and Gastric Surgery, National Cancer Center/National Clinical Research Center for Cancer/Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing 100021, China
- Blaž Trotovšek, PhD, Associate Professor**, Department of Abdominal Surgery, University Medical Centre Ljubljana, Ljubljana 1000, Slovenia
- Dirk Uhlmann, FACS, MD, PhD, Professor**, Department of Visceral, Transplant, Thoracic and Vascular Surgery, University of Leipzig, Leipzig 04103, Germany
- Ketan Vagholkar, FACS, FRCS (Gen Surg), Full Professor**, Department of Surgery, D.Y.Patil University School of Medicine, Navi Mumbai, Maharashtra 400706, India
- Daniel Reis Waisberg, MD, PhD, Assistant Professor**, Department of Gastroenterology, Abdominal Organs Transplantation Division, Hospital das Clinicas da Faculdade de Medicina da Universidade de Sao Paulo (HC-FMUSP), Sao Paulo, SP 05403-000, Brazil
- Qiang Wang, PhD, Professor**, Department of Hepatobiliary Surgery, Anhui Province Key Laboratory of Tumor Immune Microenvironment and Immunotherapy, The First Affiliated Hospital of Anhui Medical University, Hefei 230000, Anhui Province, China
- Yu Wen, MD, Professor**, Department of General Surgery, The Second Xiangya Hospital, Central South University, Changsha 410011, Hunan Province, China
- Bo-Lin Yang, FASCRS, MD, Director, Professor**, Department of Colorectal Surgery, The Affiliated Hospital of Nanjing University of Chinese Medicine, Nanjing 210029, Jiangsu Province, China
- Shozo Yokoyama, MD, PhD, Professor**, Department of Surgery, National Hospital Organization Minami Wakayama Medical Center, Tanabe 646-8558, Japan
- Kazuhiko Yoshimatsu, MD, PhD, Professor**, Department of Digestive Surgery, Kawasaki Medical School, Kurashiki, Okayama 7010192, Japan
- Christopher John Young, Associate Professor**, Department of Colorectal Surgery, Royal Prince Alfred Hospital, Newtown, NSW 2042, Australia
- Peng-Fei Yu, MD, Associate Professor**, Department of Abdominal Surgery, Zhejiang Cancer Hospital, Hangzhou 310022, Zhejiang Province, China

Andee Dzulkarnaen Zakaria, MD, Professor, Department of Surgery, School of Medical Sciences and USM Specialist Hospital, Universiti Sains Malaysia, Kubang Kerian, Kelantan 16150, Malaysia

Yong-Yi Zeng, MD, PhD, Professor, Department of Hepatobiliary Surgery, Mengchao Hepatobiliary Hospital of Fujian Medical University, Fuzhou 350025, Fujian Province, China

Lei Zhao, PhD, MD, Professor, Chief Physician, Department of Hepatobiliary Surgery, Shandong Cancer Hospital and Institute, Shandong First Medical University and Shandong Academy of Medical Sciences, Huaiyin District, Jinan 250000, Shandong Province, China; Shandong First Medical University and Shandong Academy of Medical Sciences, Huaiyin District, Jinan 250000, Shandong Province, China

Giuseppe Zimmitti, MD, PhD, Adjunct Professor, Postdoctoral Fellow, Department of General Surgery, Istituto Ospedaliero Fondazione Poliambulanza, Brescia, Lombardia 25124, Italy

Liang Zong, MD, PhD, Professor, Department of Gastrointestinal Surgery, Changzhi People's Hospital, Changzhi 046000, Shanxi Province, China; Department of Surgical Oncology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA 02115, United States

EDITORIAL

Li LY, Kobayashi S, Murakami S, Yamaguchi S, Tasaki K, Eguchi S, Kanetaka K. Integrating inflammation-based scores into gastric cancer prognosis. *World J Gastrointest Surg* 2026; 18(1): 113363 [DOI: [10.4240/wjgs.v18.i1.113363](https://doi.org/10.4240/wjgs.v18.i1.113363)]

Kolokotronis T, Pantelis D. Interventional management of acute perforated cholecystitis: When is percutaneous transhepatic cholecystostomy a reasonable therapeutic option? *World J Gastrointest Surg* 2026; 18(1): 114059 [DOI: [10.4240/wjgs.v18.i1.114059](https://doi.org/10.4240/wjgs.v18.i1.114059)]

Karmakar R, Gade P, Wang HC, Mukundan A. Very early recurrence in pancreatic cancer: Redefining prognostic markers and surveillance strategies. *World J Gastrointest Surg* 2026; 18(1): 114574 [DOI: [10.4240/wjgs.v18.i1.114574](https://doi.org/10.4240/wjgs.v18.i1.114574)]

MINIREVIEWS

Pascale MM, Gervasoni J, Bianco G, Persichilli S, Ferri L, Primiano A, Agnes S, Urbani A. Graft bile analysis for predicting post-transplant outcomes: A literature review and a protocol for a novel biomarker. *World J Gastrointest Surg* 2026; 18(1): 114662 [DOI: [10.4240/wjgs.v18.i1.114662](https://doi.org/10.4240/wjgs.v18.i1.114662)]

ORIGINAL ARTICLE**Case Control Study**

Ma HF, Qian JH, Chen YH, Wang Y, Wang YM, Li JN, Zhou ZY, Ma JX, Zhang XC. Targeting obesity and lipid metabolism profiles to prevent perianal abscesses: A case-control study and Mendelian randomization analysis. *World J Gastrointest Surg* 2026; 18(1): 113855 [DOI: [10.4240/wjgs.v18.i1.113855](https://doi.org/10.4240/wjgs.v18.i1.113855)]

Retrospective Cohort Study

Wen LL, Li JY, Zhang SY. Impact of “four-step” death education on life quality and negative emotions in advanced esophageal cancer patients and families. *World J Gastrointest Surg* 2026; 18(1): 112238 [DOI: [10.4240/wjgs.v18.i1.112238](https://doi.org/10.4240/wjgs.v18.i1.112238)]

Zhang Q, He XH, Liu X, Ling XJ, Zhang YM. Application of a novel small intestine decompression method in patients with intestinal obstruction: A retrospective cohort study. *World J Gastrointest Surg* 2026; 18(1): 112927 [DOI: [10.4240/wjgs.v18.i1.112927](https://doi.org/10.4240/wjgs.v18.i1.112927)]

Li Y, Wang CY, Li YX, Wu ZJ, Guo LJ. Clinical features of post-colonoscopy colorectal cancer and real-world multi-scale correlation analysis. *World J Gastrointest Surg* 2026; 18(1): 112954 [DOI: [10.4240/wjgs.v18.i1.112954](https://doi.org/10.4240/wjgs.v18.i1.112954)]

Sultan A, Zakaria Z, Riaz S, Goni MD, Zakaria AD. Perioperative characteristics and outcomes of colorectal cancer in elderly patients. *World J Gastrointest Surg* 2026; 18(1): 113040 [DOI: [10.4240/wjgs.v18.i1.113040](https://doi.org/10.4240/wjgs.v18.i1.113040)]

Özden Y, Buyukberber NM. Admission hyperphosphatemia as a predictor of severity and mortality in acute pancreatitis: A 1000-patient cohort study. *World J Gastrointest Surg* 2026; 18(1): 114227 [DOI: [10.4240/wjgs.v18.i1.114227](https://doi.org/10.4240/wjgs.v18.i1.114227)]

Demir M, Ekcı B, Peker S, Bekraki A, Isik AL, Kilavuz H, Kurtulus I. Timing of laparoscopic appendectomy and impacts on outcomes: A retrospective study of patients across in-hours, after-hours and holidays. *World J Gastrointest Surg* 2026; 18(1): 114336 [DOI: [10.4240/wjgs.v18.i1.114336](https://doi.org/10.4240/wjgs.v18.i1.114336)]

Retrospective Study

Zhen J, Chen W, Xu YF, Ma YM. Risk factors and prediction model for acute respiratory distress syndrome in patients with digestive tumor after surgery. *World J Gastrointest Surg* 2026; 18(1): 112103 [DOI: [10.4240/wjgs.v18.i1.112103](https://doi.org/10.4240/wjgs.v18.i1.112103)]

Li Z, Wu WZ, Song Y, Li ZP, Guo D, Li Y. Early gastric dilation after laparoscopic sleeve gastrectomy: Insights from a three-dimensional computed tomography reconstruction study. *World J Gastrointest Surg* 2026; 18(1): 112251 [DOI: [10.4240/wjgs.v18.i1.112251](https://doi.org/10.4240/wjgs.v18.i1.112251)]

Wu CM, Zhu WJ, Chen X, Liu M, Feng Y, Wang M. Risk factors for enteral nutrition intolerance and its impact on prognosis in patients with severe acute pancreatitis. *World J Gastrointest Surg* 2026; 18(1): 112334 [DOI: [10.4240/wjgs.v18.i1.112334](https://doi.org/10.4240/wjgs.v18.i1.112334)]

Bautista-Mondragón CA, Mijangos-Trejo AM, González-Chon O, Mondragón-Ratkovich P, Chávez-Tapia NC. Predictors of mortality and liver transplant requirement in patients with hepatitis A virus: A case series from Mexico. *World J Gastrointest Surg* 2026; 18(1): 112767 [DOI: [10.4240/wjgs.v18.i1.112767](https://doi.org/10.4240/wjgs.v18.i1.112767)]

Al-Rubaye R, Elshaer M, Moawad KR, Gaurav R. Biliary complications following donation after brainstem death liver transplantation. *World J Gastrointest Surg* 2026; 18(1): 112906 [DOI: [10.4240/wjgs.v18.i1.112906](https://doi.org/10.4240/wjgs.v18.i1.112906)]

Li PP, Qu Q, Shao CH. Comparison of epidural anesthesia and intravenous self-control analgesia on postoperative recovery quality in duodenectomy. *World J Gastrointest Surg* 2026; 18(1): 112988 [DOI: [10.4240/wjgs.v18.i1.112988](https://doi.org/10.4240/wjgs.v18.i1.112988)]

Huang Q, Li Y, Feng SD, Fang YC, Zhou YH, Li DW, Liao ZW. Short-term outcomes of laparoscopic-assisted transanal vs laparoscopic total mesorectal excision for mid-to-low rectal cancer. *World J Gastrointest Surg* 2026; 18(1): 113046 [DOI: [10.4240/wjgs.v18.i1.113046](https://doi.org/10.4240/wjgs.v18.i1.113046)]

Asano F, Matsuyama R, Kumamoto T, Shinkai M, Morioka D, Shinoda S, Endo I. Clinical characteristics of and risk factors for hepatolithiasis developed after surgery for congenital biliary dilatation. *World J Gastrointest Surg* 2026; 18(1): 113350 [DOI: [10.4240/wjgs.v18.i1.113350](https://doi.org/10.4240/wjgs.v18.i1.113350)]

Zhou CY, Chen JY, Wang D, Zhu S, Luo HC. Patterns and risk factors of early recurrence after radical resection for intrahepatic cholangiocarcinoma. *World J Gastrointest Surg* 2026; 18(1): 113518 [DOI: [10.4240/wjgs.v18.i1.113518](https://doi.org/10.4240/wjgs.v18.i1.113518)]

Gao XX, Su SH, Huang DD. Dynamic ultrasound monitoring of intraperitoneal effusion for predicting complications after laparoscopic gastrectomy. *World J Gastrointest Surg* 2026; 18(1): 113894 [DOI: [10.4240/wjgs.v18.i1.113894](https://doi.org/10.4240/wjgs.v18.i1.113894)]

Guo Y, Zhang M, Liu N, Meng XK, Li J. Comparing efficacy of a jejunostomy tube vs a nasojejunal nutrient tube after pancreatectomy. *World J Gastrointest Surg* 2026; 18(1): 113967 [DOI: [10.4240/wjgs.v18.i1.113967](https://doi.org/10.4240/wjgs.v18.i1.113967)]

Zhou LL, Li CL, Zhang JF, Wu C, Cheng ZJ. Fu Zheng Li Qi Tang combined with FOCUS-PDCA model in postoperative rehabilitation of elderly biliary surgery patients. *World J Gastrointest Surg* 2026; 18(1): 113989 [DOI: [10.4240/wjgs.v18.i1.113989](https://doi.org/10.4240/wjgs.v18.i1.113989)]

Duan XX, Yu X, Gan J. Analysis of quality of life and reflux oesophagitis following Billroth II and Roux-en-Y gastrointestinal reconstruction for gastric cancer. *World J Gastrointest Surg* 2026; 18(1): 114164 [DOI: [10.4240/wjgs.v18.i1.114164](https://doi.org/10.4240/wjgs.v18.i1.114164)]

Duan XX, Yu X, Zhou L. Timeliness of postoperative serum carcinoembryonic antigen monitoring for predicting recurrence after gastric cancer surgery. *World J Gastrointest Surg* 2026; 18(1): 114309 [DOI: [10.4240/wjgs.v18.i1.114309](https://doi.org/10.4240/wjgs.v18.i1.114309)]

Akeel N, Rajasingh CM, Earley M, Au Hoy S, Neshatian L, Enemchukwu E, Mishra K, Gurland B. Perception of rectal prolapse symptoms in patients with psychiatric disorders. *World J Gastrointest Surg* 2026; 18(1): 114452 [DOI: 10.4240/wjgs.v18.i1.114452]

Taşkin AK, Akar M, Turgut MS, Bilir B, Karademir E. Preoperative clinical and laboratory factors associated with early complications after low anterior resection: Exploratory analysis of the eosinophil/lymphocyte ratio. *World J Gastrointest Surg* 2026; 18(1): 114570 [DOI: 10.4240/wjgs.v18.i1.114570]

Qian JJ, Xu M, Ji YS. Assessing predictive value of contrast-enhanced ultrasound combined with doppler ultrasound for post-transcatheter arterial chemoembolization prognosis in hepatocellular carcinoma. *World J Gastrointest Surg* 2026; 18(1): 114692 [DOI: 10.4240/wjgs.v18.i1.114692]

Yang J, Yang YX, Du QJ, Gao HW, Bai YN. Neutrophil-lymphocyte ratio, albumin-alkaline phosphatase ratio, and bilirubin predict outcomes in hepatectomy hepatolithiasis patients. *World J Gastrointest Surg* 2026; 18(1): 114810 [DOI: 10.4240/wjgs.v18.i1.114810]

Demirtas G, Ekberli G, Tiryaki HT. Anorectal changes and clinical outcomes after the Duhamel operation. *World J Gastrointest Surg* 2026; 18(1): 115171 [DOI: 10.4240/wjgs.v18.i1.115171]

Chen XX, Han XF, Chu Y. Naloxone plus enteral nutrition for gastrointestinal dysfunction in elderly cerebral infarction and peptic ulcer patients. *World J Gastrointest Surg* 2026; 18(1): 115201 [DOI: 10.4240/wjgs.v18.i1.115201]

Observational Study

Kijpongpan K, Ariizumi S, Ome Y, Kawamoto Y, Matsunaga Y, Honda G. Laparoscopic hepatectomy is feasible for patients diagnosed with hepatocellular carcinoma and cirrhotic liver. *World J Gastrointest Surg* 2026; 18(1): 114262 [DOI: 10.4240/wjgs.v18.i1.114262]

Zhang X, Zhang Q, Wang MJ, Sun YT, Lu JG. Differences in testosterone levels in perianal diseases: A comparative study of abscesses and fistulas. *World J Gastrointest Surg* 2026; 18(1): 114445 [DOI: 10.4240/wjgs.v18.i1.114445]

Prospective Study

Güneş G, Fırat Oğuz E, Kayılıoğlu I, Dinç T. Diagnostic value of interleukin-8 in colon cancer: Prospective, case-control study. *World J Gastrointest Surg* 2026; 18(1): 115444 [DOI: 10.4240/wjgs.v18.i1.115444]

Randomized Controlled Trial

Zhang K, Li ZJ. Identifying neuropathic pain and the effects of perioperative psychological intervention in patients with gastric cancer. *World J Gastrointest Surg* 2026; 18(1): 114337 [DOI: 10.4240/wjgs.v18.i1.114337]

Basic Study

Paramasivam R, Jaensch C, Kristensen NM, Paramasivam SS, Woldeselassie H, Jensen LK, Madsen AH, Ørntoft MBW. Septic shock reduces intestinal microcirculation and anastomotic perfusion: A porcine laser speckle contrast imaging study. *World J Gastrointest Surg* 2026; 18(1): 111928 [DOI: 10.4240/wjgs.v18.i1.111928]

Liu N, Liu J, Wang YL, Zhu L, Zhu CW. Knockdown of 5-methylcytosine RNA methyltransferase NOP2/sun RNA methyltransferase 5 in hepatocellular carcinoma cells affects their biological functions. *World J Gastrointest Surg* 2026; 18(1): 112243 [DOI: 10.4240/wjgs.v18.i1.112243]

META-ANALYSIS

Mirghani HO. One-anastomosis gastric bypass vs sleeve gastrectomy for complications, perioperative status, and quality of life: Meta-analysis. *World J Gastrointest Surg* 2026; 18(1): 112017 [DOI: 10.4240/wjgs.v18.i1.112017]

de la Plaza Llamas R, Ribera Díaz D, Betancor Díaz P, Díaz Candelas DA, Latorre-Fragua RA, Gorini L, Arellano González R, Gemio del Rey IA. Staging laparoscopy in esophagogastric junction cancer: Systematic review and meta-analysis. *World J Gastrointest Surg* 2026; 18(1): 115285 [DOI: [10.4240/wjgs.v18.i1.115285](https://doi.org/10.4240/wjgs.v18.i1.115285)]

CASE REPORT

Li CK, Cao RR, Su DS, Ming J, Li YC, Shao XD, Qi XS. Diagnosis of bile duct metastasis from gastric cancer by endoscopic retrograde cholangiopancreatography combined with choledochoscopy: A case report. *World J Gastrointest Surg* 2026; 18(1): 112416 [DOI: [10.4240/wjgs.v18.i1.112416](https://doi.org/10.4240/wjgs.v18.i1.112416)]

Yu ZH, Ling CR, Yu JY, Zhang QH, Wei SS. Long-term disease-free survival following preoperative diagnosis and laparoscopic radical resection for Meckel's diverticulum adenocarcinoma: A case report. *World J Gastrointest Surg* 2026; 18(1): 114022 [DOI: [10.4240/wjgs.v18.i1.114022](https://doi.org/10.4240/wjgs.v18.i1.114022)]

Fang KH, Chang HM, Wu TH. Successful treatment of gastrobronchial fistula following laparoscopic sleeve gastrectomy: A case report and review of literature. *World J Gastrointest Surg* 2026; 18(1): 114041 [DOI: [10.4240/wjgs.v18.i1.114041](https://doi.org/10.4240/wjgs.v18.i1.114041)]

Wang F, Shi ZX, He XY, Han XJ, Wang JH, Yang JY, Cui LM. Hepatic epithelioid angiomyolipoma treated with laparoscopic resection and transcatheter arterial embolization first time: A case report and review of literature. *World J Gastrointest Surg* 2026; 18(1): 114050 [DOI: [10.4240/wjgs.v18.i1.114050](https://doi.org/10.4240/wjgs.v18.i1.114050)]

Yu JQ, He XS, Xue YZ, Hu LY, Wen X, Yang XD, Zhou X. Gallbladder small cell carcinoma from chronic cholecystitis: A case report and review of literature. *World J Gastrointest Surg* 2026; 18(1): 114477 [DOI: [10.4240/wjgs.v18.i1.114477](https://doi.org/10.4240/wjgs.v18.i1.114477)]

Jizhi SN, Chen XY, Wu SS, Chen ZL, Liu AN, Zheng SM. Mesenteric Castleman disease: Two case reports and review of literature. *World J Gastrointest Surg* 2026; 18(1): 114697 [DOI: [10.4240/wjgs.v18.i1.114697](https://doi.org/10.4240/wjgs.v18.i1.114697)]

LETTER TO THE EDITOR

Liu QZ, Zeng L, Sun NZ. Feasibility analysis of ultrasound-guided percutaneous catheter drainage for pyogenic liver abscess in non-liquefied stages. *World J Gastrointest Surg* 2026; 18(1): 113758 [DOI: [10.4240/wjgs.v18.i1.113758](https://doi.org/10.4240/wjgs.v18.i1.113758)]

Bu F, Zhang SY, Liu ZJ. Anesthesiologist's perspective on endoscopic submucosal dissection: Bridging minimally invasive surgery and enhanced recovery after surgery management. *World J Gastrointest Surg* 2026; 18(1): 114299 [DOI: [10.4240/wjgs.v18.i1.114299](https://doi.org/10.4240/wjgs.v18.i1.114299)]

Varkey TC. "Problem of pain": Further questions for the utility of vitamin D for chronic pain after gastrointestinal surgery. *World J Gastrointest Surg* 2026; 18(1): 114909 [DOI: [10.4240/wjgs.v18.i1.114909](https://doi.org/10.4240/wjgs.v18.i1.114909)]

Ren SQ, Han YH, Cai C. Age and red cell distribution width in pancreatic cystic neoplasms: A simple tool for preoperative malignancy risk stratification. *World J Gastrointest Surg* 2026; 18(1): 115078 [DOI: [10.4240/wjgs.v18.i1.115078](https://doi.org/10.4240/wjgs.v18.i1.115078)]

ABOUT COVER

Editorial Board Member of *World Journal of Gastrointestinal Surgery*, Francis Seow-Choen, Visiting Consultant, Department of Colorectal Surgery, Singapore General Hospital, Singapore 169608, Singapore.
seowchoen@colorectalcentre.com

AIMS AND SCOPE

The primary aim of *World Journal of Gastrointestinal Surgery* (*WJGS, World J Gastrointest Surg*) is to provide scholars and readers from various fields of gastrointestinal surgery with a platform to publish high-quality basic and clinical research articles and communicate their research findings online.

WJGS mainly publishes articles reporting research results and findings obtained in the field of gastrointestinal surgery and covering a wide range of topics including biliary tract surgical procedures, biliopancreatic diversion, colectomy, esophagectomy, esophagostomy, pancreas transplantation, and pancreatectomy, etc.

INDEXING/ABSTRACTING

The *WJGS* is now abstracted and indexed in Science Citation Index Expanded (SCIE, also known as SciSearch®), Current Contents/Clinical Medicine, Journal Citation Reports/Science Edition, PubMed, PubMed Central, Reference Citation Analysis, China Science and Technology Journal Database, and Superstar Journals Database. The 2025 Edition of Journal Citation Reports® cites the 2024 journal impact factor (JIF) for *WJGS* as 1.7; JIF without journal self cites: 1.6; 5-year JIF: 2.0; JIF Rank: 148/312 in surgery; JIF Quartile: Q2; and 5-year JIF Quartile: Q2.

RESPONSIBLE EDITORS FOR THIS ISSUE

Production Editor: Zi-Hang Xu, Production Department Director: Xiang Li, Cover Editor: Jia-Ru Fan.

NAME OF JOURNAL

World Journal of Gastrointestinal Surgery

ISSN

ISSN 1948-9366 (online)

LAUNCH DATE

November 30, 2009

FREQUENCY

Monthly

EDITORS-IN-CHIEF

Eva Lieto

EDITORIAL BOARD MEMBERS

<https://www.wjgnet.com/1948-9366/editorialboard.htm>

PUBLICATION DATE

January 27, 2026

COPYRIGHT

© 2026 Baishideng Publishing Group Inc

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>

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>



Age and red cell distribution width in pancreatic cystic neoplasms: A simple tool for preoperative malignancy risk stratification

Shu-Qi Ren, Yuan-Huan Han, Chuang Cai

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 B

Novelty: Grade B

Creativity or Innovation: Grade B

Scientific Significance: Grade B

P-Reviewer: Li MN, Professor, China

Received: October 9, 2025

Revised: October 30, 2025

Accepted: November 10, 2025

Published online: January 27, 2026

Processing time: 106 Days and 5.3 Hours



Shu-Qi Ren, Yuan-Huan Han, Department of Laboratory Medicine, Tanzhou People's Hospital of Zhongshan, Zhongshan 528467, Guangdong Province, China

Chuang Cai, Cancer Research Institute of Zhongshan City, Zhongshan City People's Hospital, Zhongshan 528445, Guangdong Province, China

Corresponding author: Chuang Cai, PhD, Assistant Professor, Cancer Research Institute of Zhongshan City, Zhongshan City People's Hospital, No. 2 Sunwen East Road, Zhongshan 528445, Guangdong Province, China. caich6@foxmail.com

Abstract

The study conducted by Martli *et al*, on the preoperative risk stratification of malignant potential in pancreatic cystic neoplasms (PCNs), identifies age and red cell distribution width (RDW) as independent predictors. This study offers a simple and cost-effective clinical tool for preoperative assessments. The significance lies in its integration of routine laboratory parameters with clinical features, effectively addressing the limitations associated with the accessibility and operator dependency of imaging and invasive diagnostic methods. However, factors such as the retrospective design, single-center setting, small sample size, and selection bias because of the inclusion of only surgical cases limit the generalizability of the findings. Future studies should emphasize multi-center prospective validation to further clarify the biological role of RDW in the malignant transformation of PCNs and to explore integrated models that combine RDW with imaging characteristics and molecular biomarkers, ultimately enhancing precision in individualized clinical decision-making.

Key Words: Pncreatic cystic neoplasms; Red cell distribution width; Age; Preoperative assessment; Malignancy risk stratification

©The Author(s) 2026. Published by Baishideng Publishing Group Inc. All rights reserved.

Core Tip: This article underscores the significance of age and red cell distribution width (RDW) as independent predictors for preoperative malignant risk stratification in pancreatic cystic neoplasms (PCNs). A model that integrates these factors demonstrated high accuracy (area under the curve = 0.858), with age ≥ 60 years and RDW $\geq 15.5\%$ indicating increased risk. This accessible, non-invasive tool may help to identify high-risk patients for intervention, though future multicenter validation is required. The biological role of RDW in the progression of PCN also warrants further study.

Citation: Ren SQ, Han YH, Cai C. Age and red cell distribution width in pancreatic cystic neoplasms: A simple tool for preoperative malignancy risk stratification. *World J Gastrointest Surg* 2026; 18(1): 115078

URL: <https://www.wjgnet.com/1948-9366/full/v18/i1/115078.htm>

DOI: <https://dx.doi.org/10.4240/wjgs.v18.i1.115078>

TO THE EDITOR

With advancements in medical imaging technology and heightened public awareness of self-healthcare, the rate of detection of pancreatic cystic neoplasms (PCNs) has been steadily increasing[1]. Although most PCNs are benign or exhibit low malignant potential, a significant proportion display high-grade dysplasia or confirmed malignant characteristics. Thus, accurate preoperative differential diagnosis is essential for formulating appropriate treatment strategies[2]. Currently, clinical practice predominantly relies on imaging modalities (*e.g.*, computed tomography, magnetic resonance imaging) and invasive techniques such as endoscopic ultrasound (EUS) guided fine-needle aspiration (FNA) for assessment of risk. These methods are often operator-dependent and associated with potential complications and demonstrate considerable variability in terms of accessibility, cost-effectiveness, and diagnostic accuracy[1,3]. Consequently, there is an urgent clinical need to develop simple, non-invasive, and broadly applicable tools for predicting malignant risk.

Currently, one of the few serum biomarkers recommended by guidelines is carbohydrate antigen 19-9 (CA19-9) that assists in the evaluation of malignant risk in pancreatic cysts. However, it has limited sensitivity and specificity, particularly in early-stage malignant lesions or non-mucinous cysts. This limits its value as a standalone diagnostic tool[4,5]. Thus, identification of more discriminative biological or clinical indicators has become important.

Recently, Martli *et al*[6] published a retrospective study in the *World Journal of Gastrointestinal Surgery* that provides new insights into this field. The study proposed using two routine clinical indicators: Age and red cell distribution width (RDW). These were used as independent predictors for the evaluation of the malignant risk of PCNs preoperatively. This approach exhibited strong discriminatory ability, providing clinicians a simple and practical auxiliary tool for the initial screening of high-risk patients. In addition, novel perspectives and methodologies for risk stratification of PCNs are also introduced.

Summary of the study

The retrospective cohort study conducted by Martli *et al*[6] included 70 patients with PCNs who underwent surgical treatment at Ankara Bilkent City Hospital between February 2019 and March 2023. Based on postoperative pathological findings, the patients were classified into group A (benign or low-grade dysplasia, $n = 40$) and group B (malignant or high-grade dysplasia, $n = 30$). Univariate and multivariate logistic regression analyses identified age and RDW as independent predictors of malignant PCNs, with area under the receiver operating characteristic curve (AUC) values of 0.798 and 0.801, respectively. The combined AUC values were 0.858, indicating strong discriminatory power. Moreover, the study established cut-off values of age ≥ 60 years and RDW $\geq 15.5\%$ for predicting malignant risk, which increased the risk of malignancy by 15.3-fold and 22.6-fold, respectively. These results suggest that age and RDW are simple, non-invasive preoperative assessment tools to assist in identifying high-risk patients who may need further advanced examinations, such as EUS, or surgical intervention. This could potentially inform clinical decision-making upon future validation. However, the single-center design and modest sample size suggest that larger-scale, multicenter investigations are warranted to validate these findings.

Strengths and limitations of the study

The main strength of this study is that the proposed predictors, age and RDW, are routine clinical parameters that are widely available and highly reproducible. To potentially aid in the identification of high-risk patients with PCNs, these two variables could be considered for future integration into standard preoperative assessment protocols; thus, optimizing the indication for EUS and FNA[3]. The model is structurally straightforward and demonstrates strong clinical applicability, showing promise for enhancing the efficiency of preoperative risk stratification while minimizing unnecessary invasive procedures.

In contrast to some previous studies that concentrated on inflammatory markers such as the neutrophil-to-lymphocyte ratio (NLR)[7], this research emphasizes the independent significance of RDW in predicting the malignant potential of PCNs, further broadening the understanding of systemic inflammatory biomarkers in the assessment of these conditions. Additionally, compared to risk stratification strategies that are primarily based on imaging characteristics[8], this study provides a non-invasive, cost-effective, and easily implementable auxiliary tool that can serve as a valuable enhancement to imaging evaluations, collectively improving the comprehensiveness of differential diagnosis. It is particularly

noteworthy that this study represents the first systematic assessment and validation of RDW's role in predicting malignant risk in PCNs. A simple yet effective predictive model has been developed by combining it with patients' age, exhibiting a certain degree of innovation and clinical translational potential.

However, this study has several limitations that warrant further investigation. First, the study's single-center retrospective design and small sample size ($n = 70$), limited to patients who underwent surgeries, may introduce selection bias and reduce the generalizability and external validity of the findings. Second, although RDW is closely related to systemic inflammation and immune-nutritional status, it remains unclear whether it specifically reflects local tumor microenvironment (TME) alterations related to PCNs or merely serves as a surrogate marker of systemic inflammation or nutritional status. The underlying biological mechanisms warrant further exploration. In addition, as a non-specific risk factor, age was defined using a threshold of ≥ 60 years. Whether this cut-off value is universally applicable across populations with different geographic, ethnic, and risk factor profiles requires validation through multicenter, large-sample studies.

Research implications and future directions

This study highlights the independent predictive value of age and RDW in the malignant risk stratification of PCNs, offering insights for clinical decision-making. However, further validation in broader populations is needed, along with exploration of the underlying biological mechanisms. Future research should prioritize:

First, multicenter, prospective cohort studies to assess the age-RDW model's generalizability and stability across diverse populations and healthcare settings. These studies should include larger sample sizes that encompass patients from diverse geographic regions, ethnicities, and stages of the disease. Moreover, these studies should integrate imaging features (such as the degree of main pancreatic duct dilation and mural nodules) and other laboratory indicators (*e.g.*, CA19-9, NLR) to enhance the predictive models, such as clinical prediction nomograms, for identification of high-risk patients.

Second, the potential biological mechanisms by which RDW influences the malignant transformation of PCNs should be investigated. Elevated RDW, as a nonspecific marker of systemic inflammation and oxidative stress, may relate to immune nutritional status and contribute to the malignant progression of PCNs. Studies indicate that RDW may be linked to the immune-nutritional status of patients with pancreatic cancer[9,10]. Specifically, patients with high RDW demonstrate poorer immune-nutritional status (as assessed using the Controlling Nutritional Status score) and unfavorable prognosis, indicating that RDW may influence the progression of the tumor by modulating systemic inflammatory responses and nutritional metabolism[9]. Existing literature suggests that elevated RDW may be associated with dysregulated erythropoietin (EPO) signaling under hypoxia within the TME, although the underlying pathophysiological mechanisms are not yet fully elucidated[11,12]. EPO may promote tumor development in pancreatic cancer through the activation of signaling pathways such as AKT/ β -catenin[11,12]. Moreover, the fibrotic microenvironment characteristic of pancreatic cancer may influence erythropoiesis dynamics through mechanical stress, with RDW serving as an inflammation-related marker that reflects this process[13,14]. Additional research has suggested a possible association between pancreatic fat deposition and RDW, indicating that disorders in lipid metabolism may contribute to elevated RDW levels by influencing erythrocyte maturation *via* oxidative stress[15].

From the perspective of clinical translation, it is essential to compare it with existing risk stratification systems to enhance the clinical applicability of the model. Currently, the Fukuoka Consensus Guidelines and the American Gastroenterological Association guidelines primarily rely on imaging features (such as main pancreatic duct dilation and mural nodules) and results from EUS guided FNA for risk stratification. In contrast, as a simple and low-cost combination of blood-based indicators, the "age plus RDW" model proposed in this study may serve as an auxiliary tool for initial screening in situations where imaging findings are atypical or medical resources are limited. It could help clinicians in identifying high-risk patients who need further invasive examinations. This will further optimize the allocation of medical resources and reduce unnecessary invasive procedures.

Moreover, one of the key directions for future validation is whether RDW can provide incremental predictive value over existing biomarkers such as CA19-9 or NLR. Although RDW is influenced by various factors such as inflammation and nutritional status, it is somewhat non-specific. However, its potential link to systemic inflammatory responses and the TME suggests that it may indicate malignant transformation from a perspective different from that of traditional biomarkers. To reduce false-positive results due to elevated RDW and avoid unnecessary invasive procedures, RDW should be used as an initial screening tool rather than a standalone diagnostic criterion. To enhance overall discriminative performance, its combined use with imaging evaluations, clinical symptoms, and other serum biomarkers (*e.g.*, CA19-9) should be emphasized. The integration of artificial intelligence or radiomics technologies in the future could lead to the development of intelligent decision-support systems that synergize clinical features, laboratory indicators, and imaging data, enhancing the risk stratification of PCNs.

CONCLUSION

This study, presented by Martli *et al*[6], proposes a promising, straightforward, and economical approach for assessing preoperative malignancy risk in PCNs. If validated through further research, the combination of age and RDW could significantly improve individualized diagnosis and treatment, establishing a foundation for ongoing investigations into risk stratification in this area.

FOOTNOTES

Author contributions: Ren SQ, Han YH and Cai C made substantial contributions to this manuscript; Ren SQ conceived the review and drafted the initial manuscript; Ren SQ and Han YH were responsible for literature collation; Ren SQ and Cai C edited and finalized the manuscript for submission; all authors reviewed and approved the submitted manuscript.

Conflict-of-interest statement: All authors disclose no financial relationships relevant to this publication.

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: China

ORCID number: Shu-Qi Ren 0009-0004-9589-199X; Chuang Cai 0000-0002-9660-0160.

S-Editor: Lin C

L-Editor: A

P-Editor: Zhao YQ

REFERENCES

- Zhang G**, Chen W, Wang Z, Wang F, Liu R, Feng J. Automated diagnosis of pancreatic mucinous and serous cystic neoplasms with modality-fusion deep neural network using multi-modality MRIs. *Front Oncol* 2023; **13**: 1181270 [RCA] [PMID: 37795452 DOI: 10.3389/fonc.2023.1181270] [FullText]
- Lopes Vendrami C**, Hammond NA, Escobar DJ, Zilber Z, Dwyer M, Moreno CC, Mittal PK, Miller FH. Imaging of pancreatic serous cystadenoma and common imitators. *Abdom Radiol (NY)* 2024; **49**: 3666-3685 [RCA] [PMID: 38825609 DOI: 10.1007/s00261-024-04337-1] [FullText]
- Gardner TB**, Park WG, Allen PJ. Diagnosis and Management of Pancreatic Cysts. *Gastroenterology* 2024; **167**: 454-468 [RCA] [PMID: 38442782 DOI: 10.1053/j.gastro.2024.02.041] [FullText]
- Zhao B**, Zhao B, Chen F. Diagnostic value of serum carbohydrate antigen 19-9 in pancreatic cancer: a systematic review and meta-analysis. *Eur J Gastroenterol Hepatol* 2022; **34**: 891-904 [RCA] [PMID: 35913776 DOI: 10.1097/MEG.0000000000002415] [FullText]
- Sumiyoshi T**, Uemura K, Shintakuya R, Okada K, Baba K, Harada T, Serikawa M, Ishii Y, Nakamura S, Arihiro K, Murakami Y, Takahashi S. Clinical Utility of the Combined Use of CA19-9 and DUPAN-2 in Pancreatic Adenocarcinoma. *Ann Surg Oncol* 2024; **31**: 4665-4672 [RCA] [PMID: 38652196 DOI: 10.1245/s10434-024-15221-z] [FullText] [Full Text(PDF)]
- Martli HF**, Acehan F, Şimşek A, Şahingöz E, Sürel AA, Er S, Tez M. Preoperative malignancy risk assessment in pancreatic cystic neoplasms using clinical and laboratory parameters. *World J Gastrointest Surg* 2025; **17**: 110306 [RCA] [PMID: 41357639 DOI: 10.4240/wjgs.v17.i11.110306] [FullText] [Full Text(PDF)]
- Worapongpaiboon R**, Siranart N, Pajareya P, Phutinart S. Inflammatory markers in predicting survival in pancreatic cancer: A Systematic review and Meta-Analysis. *Pancreatol* 2025; **25**: 385-395 [RCA] [PMID: 40050182 DOI: 10.1016/j.pan.2025.02.014] [FullText]
- Sun L**, Wang W, Zhu H, Jiang F, Peng L, Jin G, Jin Z. High-Risk Characteristics Associated with Advanced Pancreatic Cystic Lesions: Results from a Retrospective Surgical Cohort. *Dig Dis Sci* 2021; **66**: 2075-2083 [RCA] [PMID: 32705437 DOI: 10.1007/s10620-020-06481-2] [Full Text]
- Dang C**, Wang M, Qin T, Qin R. Clinical importance of preoperative red-cell volume distribution width as a prognostic marker in patients undergoing radical surgery for pancreatic cancer. *Surg Today* 2022; **52**: 465-474 [RCA] [PMID: 34524510 DOI: 10.1007/s00595-021-02374-7] [FullText] [Full Text(PDF)]
- Niu T**, Wang Y, Lu L, Li J, Cheng T, Dai Y. The value of preoperative RDW for post-pancreatectomy haemorrhage and surgical prognosis in patients with pancreatic cancer: a retrospective study. *BMC Cancer* 2025; **25**: 437 [RCA] [PMID: 40069621 DOI: 10.1186/s12885-025-13849-y] [FullText] [Full Text(PDF)]
- Katsiadis N**, Xanthopoulos A, Giamouzis G, Skoularigkis S, Skopeliti N, Moustafieri E, Ioannidis I, Patsilnakos S, Triposkiadis F, Skoularigkis J. The effect of SGLT-2i administration on red blood cell distribution width in patients with heart failure and type 2 diabetes mellitus: A randomized study. *Front Cardiovasc Med* 2022; **9**: 984092 [RCA] [PMID: 36247420 DOI: 10.3389/fcvm.2022.984092] [FullText] [Full Text (PDF)]
- Jiang J**, Cheng Y, Dai S, Zou B, Guo X. Suppression of rhomboid domain-containing 1 produces anticancer effects in pancreatic adenocarcinoma through affection of the AKT/GSK-3 β /catenin pathway. *Environ Toxicol* 2022; **37**: 1944-1956 [RCA] [PMID: 35442567 DOI: 10.1002/tox.23541] [FullText]
- Kalli M**, Li R, Mills GB, Stylianopoulos T, Zervantonakis IK. Mechanical Stress Signaling in Pancreatic Cancer Cells Triggers p38 MAPK- and JNK-Dependent Cytoskeleton Remodeling and Promotes Cell Migration via Rac1/cdc42/Myosin II. *Mol Cancer Res* 2022; **20**: 485-497 [RCA] [PMID: 34782370 DOI: 10.1158/1541-7786.MCR-21-0266] [FullText] [Full Text(PDF)]
- Hughes R**, Snook AE, Mueller AC. The poorly immunogenic tumor microenvironment of pancreatic cancer: the impact of radiation therapy, and strategies targeting resistance. *Immunotherapy* 2022; **14**: 1393-1405 [RCA] [PMID: 36468417 DOI: 10.2217/imt-2022-0046] [FullText]
- Lin D**, Wang Z, Li H, Zhang H, Deng L, Ren H, Sun S, Zheng F, Zhou J, Wang M. Automated Measurement of Pancreatic Fat Deposition on Dixon MRI Using nnU-Net. *J Magn Reson Imaging* 2023; **57**: 296-307 [RCA] [PMID: 35635494 DOI: 10.1002/jmri.28275] [FullText]



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>

