

世界华人消化杂志®

**WORLD CHINESE
JOURNAL OF DIGESTOLOGY**

Shijie Huaren Xiaohua Zazhi

2019 年 3 月 8 日 第 27 卷 第 5 期 (Volume 27 Number 5)



5 / 2019

ISSN 1009-3079



《世界华人消化杂志》是一本高质量的同行评议、开放获取和在线出版的学术刊物。本刊被国际检索系统《化学文摘(Chemical Abstracts, CA)》、《医学文摘库/医学文摘(EMBASE/Excerpta Medica, EM)》、《文摘杂志(Abstract Journal, AJ)》、Scopus、中国知网《中国期刊全文数据库(CNKI)》、《中文科技期刊数据库(CSTJ)》和《超星期刊域出版平台(Superstar Journals Database)》数据库收录。



述评

- 287 肿瘤新抗原在恶性肿瘤治疗和预后分析中的应用

陈瞧, 李佳忆, 杜顺达

基础研究

- 293 COL6A3基因在胃癌中的表达及临床意义

韩一帆, 朱少俊

临床研究

- 299 气管插管与非气管插管静脉复合麻醉在食管胃静脉曲张内镜治疗中的对比分析

于琳, 尚国臣, 陈丽娜, 陈卫刚

- 305 快速康复外科对肝胆外科手术患者炎症因子、胃肠激素及胃肠功能的影响

周轼瑜, 慎华平, 张国雷, 孙诚

- 311 50例缺血性结肠炎的临床特点分析

贾璐璐, 张连峰

- 318 行微创经皮肾穿刺激光碎石术后慢性出血的高龄患者中部分肠外营养支持作用评价

李鹏, 杨荣华, 张明华

文献综述

- 324 基于脑肠轴理论探讨调理胃肠在针灸治疗失眠中的应用

刘涛, 刘维红

- 330 外泌体在肝细胞癌发生进展及诊断治疗中的作用

刘树业

- 336 调节Th17/Treg细胞平衡的因素及其对炎症性肠病的影响

王凯强, 温红珠, 吴清远, 郑沁薇, 王孟然, 苑致维, 杨丹, 郝微微

- 341 炎症性肠病心脑血管及外周血管风险研究进展

何琼

消 息

- 298 《世界华人消化杂志》参考文献要求
317 《世界华人消化杂志》外文字符标准
323 《世界华人消化杂志》正文要求
329 《世界华人消化杂志》修回稿须知
340 《世界华人消化杂志》性质、刊登内容及目标

封面故事

王刚, 医学博士、博士后、教授、主任医师、博士研究生导师、硕士研究生导师, 哈尔滨医科大学附属第一医院肝胆外科。擅长肝、胆、胰及胃肠疾病的临床诊治, 主要从事急性慢性胰腺炎和胰腺癌发病机制的基础研究。现任《中国研究型医院学会胰腺疾病专业委员会青委会》副主任委员、《黑龙江省医学会胰腺外科分会青委会》副主任委员、《中华医学会灾难医学分会》全国青年委员、《中国研究型医院学会消化道肿瘤专业委员会青委会》委员、《中国医促会神经内分泌肿瘤分会》委员、《中华消化外科菁英会胰腺外科学组》委员和国家自然科学基金通讯评审专家。主持3项国家自然科学基金和7项国家级、省部级的课题研究。已发表学术论文134篇, 第一作者及通讯作者81篇, 其中SCI收录文章24篇, 第一及通讯作者14篇。

本期责任人

编务 李香; 送审编辑 崔丽君; 组版编辑 张砚梁; 英文编辑 王天奇; 责任编辑 崔丽君; 形式规范审核编辑部主任 马亚娟; 最终清样审核总编辑 马连生

世界华人消化杂志

Shijie Huaren Xiaohua Zazhi

吴阶平 题写封面刊名

陈可冀 题写版权刊名

(半月刊)

创 刊 1993-01-15

改 刊 1998-01-25

出 版 2019-03-08

原刊名 新消化病学杂志

期刊名称

世界华人消化杂志

国际标准连续出版物号

ISSN 1009-3079 (print) ISSN 2219-2859 (online)

主编

程英升, 教授, 200233, 上海市, 上海交通大学附属第六人民医院放射科

党双锁, 教授, 710004, 陕西省西安市, 西安交通大学医学院第二附属医院感染科

江学良, 教授, 250031, 山东省济南市, 中国人民解放军济南军区总医院消化科

刘连新, 教授, 150001, 黑龙江省哈尔滨市, 哈尔滨医科大学第一临床医学院普外科

刘占举, 教授, 200072, 上海市, 同济大学附属第十人民医院消化内科

吕宾, 教授, 310006, 浙江省杭州市, 浙江中医药大学附属医院(浙江省中医院)消化科

马大烈, 教授, 200433, 上海市, 中国人民解放军第二军医大学附属长海医院病理科

王俊平, 教授, 030001, 山西省太原市, 山西省人民医院消化科

王小众, 教授, 350001, 福建省福州市, 福建医科大学附属协和医院消化内科

姚登福, 教授, 226001, 江苏省南通市, 南通大学附属医院临床医学研究中心

张宗明, 教授, 100073, 北京市, 首都医科大学北京电力医院普外科

编辑委员会

编辑委员会成员在线名单, 详见:

<https://www.wjgnet.com/1009-3079/editorialboard.htm>

编辑部

马亚娟, 主任

《世界华人消化杂志》编辑部

Baishideng Publishing Group Inc
7901 Stoneridge Drive, Suite 501, Pleasanton, CA 94588, USA

Fax: +1-925-223-8242

Telephone: +1-925-223-8243

E-mail: wjgd@wjgnet.com

<http://www.wjgnet.com>

出版

百世登出版集团有限公司

Baishideng Publishing Group Inc
7901 Stoneridge Drive, Suite 501, Pleasanton, CA 94588, USA

Fax: +1-925-223-8242

Telephone: +1-925-223-8243

E-mail: bpgoffice@wjgnet.com

<https://www.wjgnet.com>

制作

北京百世登生物医学科技有限公司
100025, 北京市朝阳区东四环中路62号, 远洋国际中心D座903室

电话: 010-85381892

传真: 010-85381893

《世界华人消化杂志》是一本高质量的同行评议, 开放获取和在线出版的学术刊物。本刊被国际检索系统《化学文摘(Chemical Abstracts, CA)》、《医学文摘库/医学文摘(EMBASE/Excerpta Medica, EM)》、《文摘杂志(Abstract Journal, AJ)》、Scopus、中国知网《中国期刊全文数据库(CNKI)》、《中文科技期刊数据库(CSTJ)》和《超星期刊域出版平台(Superstar Journals Database)》数据库收录。

《世界华人消化杂志》正式开通了在线办公系统(<https://www.baishideng.com>), 所有办公流程一律可以在线进行, 包括投稿、审稿、编辑、审读, 以及作者、读者和编者之间的信息反馈交流。

特别声明

本刊刊出的所有文章不代表本刊编辑部和本刊编委会的观点, 除非特别声明。本刊如有印装质量问题, 请向本刊编辑部调换。

定价

每期136.00元 全年24期3264.00元

© 2019 Baishideng Publishing Group Inc. All rights reserved.

Contents

Volume 27 Number 5 Mar 8, 2019

EDITORIAL

- 287 Application of neoantigens in malignant tumor treatment and prognosis evaluation

Chen Q, Li JY, Du SD

BASIC RESEARCH

- 293 Clinical significance of COL6A3 expression in gastric cancer

Han YF, Zhu SJ

CLINICAL RESEARCH

- 299 Comparative analysis of tracheal intubation anesthesia vs non-tracheal intubation anesthesia for endoscopic treatment of esophago-gastric varices

Yu L, Shang GC, Chen LN, Chen WG

- 305 Impact of fast track surgery on inflammatory factors, gastrointestinal hormones, and gastrointestinal function in patients undergoing hepatobiliary surgery

Zhou SY, Shen HP, Zhang GL, Sun C

- 311 Clinical characteristics of ischemic colitis: Analysis of 50 cases

Jia LL, Zhang LF

- 318 Partial parenteral nutrition support in elderly patients with chronic hemorrhage after minimally invasive percutaneous nephrolithotomy

Li P, Yang RH, Zhang MH

REVIEW

- 324 Application of gastrointestinal regulation in acupuncture treatment of insomnia based on the brain-gut axis theory

Liu T, Liu WH

- 330 Role of exosomes in pathogenesis, progression, diagnosis and treatment of hepatocellular carcinoma

Liu SY

- 336 Factors involved in balance of Th17/Treg cells: Clinical implications in inflammatory bowel disease

Wang KQ, Wen HZ, Wu QY, Zheng QW, Wang MW, Wan ZW, Yang D, Hao WW

- 341 Cardiocerebral and peripheral vascular risks in inflammatory bowel disease

He Q

Contents

World Chinese Journal of Digestology
Volume 27 Number 5 Mar 8, 2019

COVER

Editorial Board Member of *World Chinese Journal of Digestology*, Gang Wang, Professor, Chief Physician, Doctoral Supervisor, Department of Pancreatic and Biliary Surgery, The First Affiliated Hospital of Harbin Medical University, 23 Youzheng Street, Nangang District, Harbin 150001, Heilongjiang Province, China

Indexed/Abstracted by

Chemical Abstracts, EMBASE/Excerpta Medica, Abstract Journals, Scopus, CNKI, and Superstar Journals Database.

RESPONSIBLE EDITORS FOR THIS ISSUE

Assistant Editor: *Xiang Li* Review Editor: *Li-Jun Cui* Electronic Editor: *Yan-Liang Zhang* English Language Editor: *Tian-Qi Wang* Editor-in-Charge: *Li-Jun Cui* Proof Editor: *Ya-Juan Ma* Layout Reviewer: *Lian-Sheng Ma*

Shijie Huaren Xiaohua Zazhi

Founded on January 15, 1993
Renamed on January 25, 1998
Publication date March 8, 2019

NAME OF JOURNAL

World Chinese Journal of Digestology

ISSN

ISSN 1009-3079 (print) ISSN 2219-2859 (online)

EDITOR-IN-CHIEF

Ying-Sheng Cheng, Professor, Department of Radiology, Sixth People's Hospital of Shanghai Jiaotong University, Shanghai 200233, China

Shuang-Suo Dang, Professor, Department of Infectious Diseases, the Second Affiliated Hospital of Medical School of Xi'an Jiaotong University, Xi'an 710004, Shaanxi Province, China

Xue-Liang Jiang, Professor, Department of Gastroenterology, General Hospital of Jinan Military Command of Chinese PLA, Jinan 250031, Shandong Province, China

Lian-Xin Liu, Professor, Department of General Surgery, the First Clinical Medical College of Harbin Medical University, Harbin 150001, Heilongjiang Province, China

Zhan-Ju Liu, Professor, Department of Gastroenterology, Shanghai Tenth People's Hospital, Tongji University, Shanghai 200072, China

Bin Lv, Professor, Department of Gastroenterology, the First Affiliated Hospital of Zhejiang Chinese Medical University, Hangzhou 310006, Zhejiang Province, China

Da-Lie Ma, Professor, Department of Pathology, Changhai Hospital, the Second Military Medical University of Chinese PLA, Shanghai 200433, China

Jun-Ping Wang, Professor, Department of Gastroenterology, People's Hospital of Shanxi, Taiyuan 030001, Shanxi Province, China

Xiao-Zhong Wang, Professor, Department of Gastroenterology, Union Hospital, Fujian Medical University, Fuzhou 350001, Fujian Province, China

Deng-Fu Yao, Professor, Clinical Research Center, Affiliated Hospital of Nantong University, Nantong 226001, Jiangsu Province, China

Zong-Ming Zhang, Professor, Department of General Surgery, Beijing Electric Power Hospital, Capital Medical University, Beijing 100073, China

EDITORIAL BOARD MEMBERS

All editorial board members resources online at <https://www.wjgnet.com/1009-3079/editorialboard.htm>

EDITORIAL OFFICE

Ya-Juan Ma, Director

World Chinese Journal of Digestology

Baishideng Publishing Group Inc
7901 Stoneridge Drive, Suite 501, Pleasanton, CA 94588, USA

Fax: +1-925-223-8242

Telephone: +1-925-223-8243

E-mail: wjcd@wjgnet.com

<https://www.wjgnet.com>

PUBLISHER

Baishideng Publishing Group Inc
7901 Stoneridge Drive, Suite 501, Pleasanton, CA 94588, USA

Fax: +1-925-223-8242

Telephone: +1-925-223-8243

E-mail: bpgoffice@wjgnet.com

<https://www.wjgnet.com>

PRODUCTION CENTER

Beijing Baishideng BioMed Scientific Co., Limited Room 903, Building D, Ocean International Center, No. 62 Dongsihuan Zhonglu, Chaoyang District, Beijing 100025, China
Telephone: +86-10-85381892
Fax: +86-10-85381893

PRINT SUBSCRIPTION

RMB 136 Yuan for each issue
RMB 3264 Yuan for one year

COPYRIGHT

© 2019 Baishideng Publishing Group Inc. Articles published by this open access journal are distributed under the terms of the Creative Commons Attribution Non-commercial License, which permits use, distribution, and reproduction in any medium, provided the original work is properly cited, the use is non commercial and is otherwise in compliance with the license.

SPECIAL STATEMENT

All articles published in journals owned by the Baishideng Publishing Group (BPG) represent the views and opinions of their authors, but not the views, opinions or policies of the BPG, except where otherwise explicitly indicated.

INSTRUCTIONS TO AUTHORS

Full instructions are available online at <https://www.wjgnet.com/1009-3079/Nav/36>. If you do not have web access, please contact the editorial office.

炎症性肠病心脑血管及外周血管风险研究进展

何琼

何琼, 暨南大学附属第一医院消化内科 广东省广州市 510630

何琼, 主治医师, 主要从事炎症性肠病和消化道肿瘤基础与临床应用研究.

基金项目: 国家自然科学基金, No. 81500420; 广东省自然科学基金, No. 2015A030310114.

作者贡献分布: 本文有何琼独立完成.

通讯作者: 何琼, 主治医师, 510630, 广东省广州市天河区黄埔大道西613号, 暨南大学附属第一医院消化内科. heqiong_82@126.com

收稿日期: 2018-10-13

修回日期: 2018-11-02

接受日期: 2018-11-15

在线出版日期: 2019-03-08

Cardiocerebral and peripheral vascular risks in inflammatory bowel disease

Qiong He

Qiong He, Department of Gastroenterology, First Affiliated Hospital of Jinan University, Guangzhou 510630, Guangdong Province, China

Supported by: National Natural Science Foundation of China, No. 81500420; Guangdong Natural Science Foundation, No. 2015A030310114.

Corresponding author: Qiong He, Attending Physician, Department of Gastroenterology, First Affiliated Hospital of Jinan University, 613 West Whampoa Road, Tianhe District, Guangzhou 510630, Guangdong Province, China. heqiong_82@126.com

Received: 2018-10-13

Revised: 2018-11-02

Accepted: 2018-11-15

Published online: 2019-03-08

Abstract

Inflammatory bowel disease (IBD) is a chronic inflammatory disease that mainly affects the digestive

tract. In addition to intestinal manifestations, it also has many extraintestinal manifestations. There have been a number of reports of IBD with secondary opportunistic infections, perforation, cancer, *etc.* IBD is reported with more and more cardiovascular events, but the conclusions are still controversial. At present, clinicians pay insufficient attention to the assessment of cardiocerebral and peripheral vascular risks in IBD. This article reviews the relevant literature on cardiovascular, cerebrovascular and peripheral vascular risks in IBD published in recent years, with an aim to help clinicians be familiar with these risks and develop individualized management regimens in clinical practice.

© The Author(s) 2019. Published by Baishideng Publishing Group Inc. All rights reserved.

Key Words: Inflammatory bowel disease; Ulcerative colitis; Crohn's disease; Cardiovascular; Cerebrovascular; Peripheral vascular; Risk

He Q. Cardiocerebral and peripheral vascular risks in inflammatory bowel disease. *Shijie Huaren Xiaohua Zazhi* 2019; 27(5): 341-346
URL: <https://www.wjgnet.com/1009-3079/full/v27/i5/341.htm>
DOI: <https://dx.doi.org/10.11569/wcjd.v27.i5.341>

摘要

炎症性肠病(inflammatory bowel disease, IBD)是一种主要累及消化道的慢性疾病,除了肠道症状以外还有肠道外其他临床表现. IBD继发机会性感染、穿孔、狭窄、癌变等已有诸多报道. 随着IBD并发心血管事件报道越来越多,且研究存有争议,而临床医生也对其风险评估和重视不足. 本文查阅国内外近年来发表的相关文献,就IBD心血管风险研究进展进行综述,旨在让临床医生对其风险熟悉并结合临床制定好个体化管理.

© The Author(s) 2019. Published by Baishideng Publishing

Group Inc. All rights reserved.

关键词: 炎症性肠病; 溃疡性结肠炎; 克罗恩病; 心血管风险

核心提要: 炎症性肠病(inflammatory bowel disease, IBD)发病率和患病率在我国有上升趋势, 同时其合并症也多见。机会性感染、穿孔、狭窄、手术风险、癌变等风险已存在诸多报道。心脑血管风险在近年来报道逐渐增多, 了解和熟悉IBD继发心脑血管风险, 有助于临床对其风险的预估和患者个体化管理。

何琼. 炎症性肠病心脑血管及外周血管风险研究进展. 世界华人消化杂志 2019; 27(5): 341-346

URL: <https://www.wjgnet.com/1009-3079/full/v27/i5/341.htm>

DOI: <https://dx.doi.org/10.11569/wcjd.v27.i5.341>

0 引言

炎症性肠病(inflammatory bowel disease, IBD)是一种主要累及消化道的慢性炎症性疾病, 主要包括溃疡性结肠炎(ulcerative colitis, UC)和克罗恩病(crohn's disease, CD)2种类型。UC好发年龄30-40岁, CD好发于20-40岁, 两者均无明显性别分布差异。近年来的流行病学数据显示, IBD在世界范围内的发病率呈升高趋势, 其中发达国家高于发展中国家, 城市高于农村^[1,2]。IBD是一种慢性疾病, 其并发症也多见, 既往研究对IBD并发机会性感染、穿孔、肠道狭窄、癌变、手术风险有诸多报道和描述。随着近些年来IBD发病率在欧美和亚洲都有升高, 对IBD认识增多和诊疗水平的进步, 其继发心血管风险的报道逐渐增多, 我们就IBD心血管风险予以重点阐述。

1 IBD与冠状动脉性心脏病

近年来有研究发现, 促炎因子导致的炎症可引起动脉僵硬和内膜增厚。动脉粥样硬化被认为是一种炎症性疾病, 其激活的内皮细胞产生的趋化信号驱使免疫细胞在动脉壁浸润^[3]。此外, 激活的巨噬细胞、T细胞、肥大细胞在斑块破裂的位置分泌促炎因子如IL-6、TNF、蛋白酶、凝血因子、氧自由基和活性分子等物质使其病变不稳定^[4]。这些分子抑制稳定的纤维帽的形成、促使血小板的激活、破裂、血栓形成和缺血的发生。

研究者把动脉僵硬度和颈动脉内膜厚度作为早期动脉粥样硬化的标志物, 结果发现IBD患者与主动脉僵硬、左心室收缩和舒张功能不全有关, 他们发现IBD患者的平均动脉内膜中层厚度要比非IBD患者更厚, 血管扩张度更低, 但其潜在的机制并不十分清楚^[5-8]。众所周知, 临床上高脂血症与心血管疾病风险紧密相关, 增

加心血管事件的发生率和死亡率。进一步有研究发现高总胆固醇和高甘油三酯在IBD患者比对照组患者更为常见, 特别是CD, 且与IBD严重性呈正相关^[9]。

随着基础研究和亚临床研究发现, 临床研究也进一步开展。2008年由加拿大Bernstein等^[10]人发起的一个群体研究发现相对于非IBD患者, IBD增加患缺血性心脏病风险高达26%, 其中CD患者风险比UC患者略高, 但没有性别差异。另一项来自美国的临床研究发现, >40岁的女性IBD患者患心肌梗死(myocardial infarction, MI)的风险明显增加^[11]。同样, 一项来自美国单中心研究对纳入住院的IBD患者进行分析后发现, 住院IBD患者并发冠状动脉性心脏病(coronary heart disease, CHD)的风险是因其他原因住院非IBD患者的4倍, 在调节年龄、性别和其他CHD风险因素后分析后, 住院IBD患者CHD风险仍是对照组的2.6倍^[12]。一项纳入3个研究的系统回顾表明, 相对于普通人群, 不论是年轻IBD还是老年IBD患者, 其CHD风险都是增加的^[13]。然而一项横断面研究纳入住院IBD和对照组发现, IBD并不增加CHD风险, 反而是一种保护性因素^[14]。由于该研究存在明显的选择偏倚, 其结果仍需谨慎解释。2011年一项来自英国社区数据库研究纳入了9829名CD患者, UC 15498名患者, 其研究结果发现IBD患者患急性MI的风险明显增加^[15]。由于该研究并未控制混杂因素而进行分析得出的结论, 其MI的风险可能更低。

另一项来自丹麦全国注册数据库超过4600000个体的研究分析了28833个IBD患者, 随访后发现IBD患者的CHD风险高达59%, 明显高于非IBD患者。在排除混杂因素后分析发现, IBD明确诊断后随访的第1年内患者的CHD风险增加了2倍, 而在随后的随访1-13年期间, CHD的风险增加了20%, UC和CD风险无明显差异, 女性风险高于男性^[16]。随后的一项研究使用与上述研究同样的数据分析, 与其不同的是, 研究者将IBD分类为加重、持续活动、缓解期进行分析, 结果发现其增加CHD风险分别占49%、5%、1%, 可以认为IBD缓解期发生CHD的风险是很小的^[17]。然而, 该研究的测量偏倚和纳入人群的急性疾病(比如血容量过低、贫血)本身就增加短期心血管事件的发生率, 有助于增加上述的风险比。而一项来自瑞典的研究发现住院UC患者明显增加CHD风险, CD风险也升高, 但不如UC明显^[18]。

一项来自台湾随访长达13年的队列研究显示, IBD急性冠脉综合征发生率高达占87%, 总体来说是非IBD患者的1.72倍, 其中20-39岁的IBD患者风险最高, 是非IBD患者的3.28倍^[19]。研究发现每年至少住院2次的IBD患者发生ACS风险是仅住院1次IBD患者20倍, 且与IBD严重程度密切相关。而一项英国研究发现, IBD虽然并

发缺血性心脏病的风险增高, 但许多患者在诊断IBD前就发生了心肌缺血, 而在IBD诊断后第1年缺血性心脏病发生率也发现明显升高, 其中UC并发缺血性心脏病风险最高^[20]. 来自美国的McAuliffe等^[21]人对30000多例IBD患者的数据分析后发现(其中60%患者随访超过1年), 中-重度IBD患者比轻度的更易发生MI. 而另一项来自美国的研究, 纳入超过500,000住院IBD患者发现, 相对于其他人群因急性MI住院, IBD发生急性MI住院的比例明显更少^[22]. 同样地, Card等^[23]和Emanuel等^[24]人研究也发现IBD并未像既往报道的发生CHD的风险那么高. 最近一项纳入10个队列研究的Meta分析仍表明IBD CHD的风险是有增高, 但由于纳入研究异质性较大, 其结果仍需进一步研究验证^[25].

总的来说大多数研究提示IBD有增加CHD的风险, 但由于上述研究性质以及混杂因素影响, 需要更严格设计、更多的随机对照研究来进一步证实. 对于在IBD前就诊断为高血压病、代谢综合征、糖尿病、高脂血症和动脉硬化的患者, 初次诊断IBD后, 是否继发生血管风险需要引起临床的高度重视, 而对于是否进行CHD的预防策略目前仍未有进一步研究.

2 IBD与脑血管疾病

众所周知, 高血压、糖尿病、高脂血症、心房颤动是卒中的高危因素, 明显增加卒中发生率. 而正如前述所说, 近十年来已发现炎症可以促进动脉粥样硬化的形成和发展, 一些研究者提出IBD是否是脑血管疾病(cerebrovascular disease, CVD)高危因素的假设, 由此一些研究者在此假设上进行了研究.

2008年Bernstein等^[10]人的研究第一次对IBD的脑血管风险进行了评估, 他们发现CD的CVD风险是对照组的1.32倍, 而UC并未发现有CVD风险. 随后一项来自英国数据库的巢式病例对照研究表明, 该研究基于群体数据纳入8054个CD患者, 其中1748例患者发生缺血性脑卒中, 是对照组非CD患者的1.1倍^[26]. 同时他们发现, 与对照组相比, 年轻的患者(<50岁, 18-49岁)比年龄稍大的患者(>50岁, 50-80岁)的脑卒中风险更高. 根据CD的流行病学特点, 为了排除年龄、性别对结果的影响, 他们根据年龄、性别进行分层分析, 最后认为年龄和性别对此结果无明显影响. 同样来自英国的另一项研究也表明, IBD与卒中明显相关, 主要是CD, 而UC并未发现关联^[27]. 2012年, 一项来自瑞典的研究对分别纳入2万多名住院CD和UC患者的数据分析发现, CD和UC均增加脑卒中风险, 无论是缺血性脑卒中还是出血性脑卒中^[28]. 由于该研究对纳入的CD和UC是缓解期还是活动期以及是否合并CVD疾病的高危因素疾病等并未明确说明,

因此该结果需要进一步验证. 而3项来自台湾的研究表明CD和UC均增加卒中的风险, 但由于这几项研究使用的数据有重叠, 其研究结果样本其代表性仍有不足^[29-31]. Kristensen等^[32]人的研究发现, 活动期的IBD不仅增加心房颤动风险, 也增加卒中的风险, 但该研究并未分层分析CD和UC其卒中风险差异. 进一步最新的两个系统回顾和Meta分析均表明IBD与卒中存在正相关关系, 其结果均提示IBD增加患者患卒中的风险^[33,34].

3 IBD与静脉栓塞

IBD发生静脉栓塞(venous thromboembolism, VTE)在多年前就有报道, 但并未引起临床重视, 直到2008年美国胸科医师协会提出IBD是VTE的风险因素之一^[35], 但在2012年版本又并未提及. 欧美国家曾发起问卷调查, 得出的结论是临床医师对其VTE的风险及管理仍是存在不确定性^[36-38]. 随后陆续有研究开始对IBD的VTE风险进行大样本评估, 许多研究表明IBD发生VTE的风险是非IBD患者1-4倍, 有些研究甚至更高, 达8-9倍, 特别是活动期的IBD^[39-41]. 这些研究显示, VTE常见的是深静脉血栓形成(deep vein thrombosis, DVT)和肺栓塞(pulmonary embolism, PE), 其他部位如脑静脉、门静脉、肠系膜静脉、视网膜静脉的VTE少见. 对于发生过静脉栓塞的IBD, 再发VTE的风险也升高^[42-44]. 而对于术后IBD, 已有研究表明发生VTE风险是明显升高的^[45,46]. 一项系统回顾和Meta分析研究, IBD患者患VTE是非IBD的2.2倍^[39].

随着对VTE认识增多, 2010年ECCO共识^[47]在对CD共识中指出: 一旦IBD患者诊断DVT和PE, 建议遵循国际指南进行抗凝治疗, 且如果没有明显禁忌, 建议至少抗凝治疗3 mo, 初始治疗可以使用低分子肝素、普通肝素和磺达肝癸钠, 随后用维生素K拮抗剂维持治疗. 同时建议对于严重的CD、长期卧床的和术后CD患者可以进行预防性抗凝治疗, 2017年最新共识意见仍继续上述推荐^[48]. 对于UC, 2012年ECCO共识也提出, 预防性使用低分子肝素可以减少栓塞风险,^[49]最新2017年ECCO共识仍继续建议对住院的或严重非住院UC患者预防性使用, 对已经诊断VTE的患者遵循国际指南进行抗凝治疗^[50].

2014年加拿大胃肠病协会专门提出对IBD静脉血栓的风险评估、预防和治疗^[51], 共识指出: 对于初发且病情活动、没有活动性出血或出血并不严重的住院IBD患者, 建议进行血栓预防性抗凝治疗; 同时对于中-重度的非住院患者, 既往有VTE病史的, 也建议预防性抗凝治疗. 2015年该协会对非住院UC患者的提出更具体和详尽的管理策略^[52]. 次年, 多伦多共识对孕妇合

并IBD进行更细化的阐述^[53]。由于孕妇本身生理的特殊性,对于住院的孕妇合并IBD仍然推荐预防性抗凝治疗。2016年亚太针对CD的共识意见对血栓的预防和治疗未针对性提出相关指导性意见。

2017年一项全国多中心研究显示我国IBD患者VTE发生率为41.45/10万,54.17%为下肢深静脉血栓,1.98%接受预防性抗凝治疗^[54]。既往的国内IBD诊治共识并未将心血管风险考虑在内,随着对IBD认识的不断加深,我国临床和基础研究更趋标准化和规范化,最新炎症性肠病诊断与治疗共识意见(2018)已将IBD血栓的预防和治疗纳入规范,考虑重度UC的血栓风险增加,建议预防性使用低分子肝素^[55];而对于CD,目前暂未做出推荐。

总的来说,即使当前对IBD的VTE风险认识明显提高,各国也提出预防和治疗策略,然而对于预防性和治疗性抗凝治疗的风险与获益目前尚未有大样本数据研究。而且IBD治疗会使用激素、免疫抑制剂、生物制剂等药物,这些药物使用会是机会性感染的风险增加,从而增加VTE的风险。

4 IBD与外周动脉疾病

近年来研究发现,早期动脉粥样硬化在IBD患者中较为常见。陆续一些研究发现,IBD跟外周动脉栓塞有关,但由于样本量较小,不足以说明IBD增加外周动脉栓塞的风险^[10,11]。最近有研究显示,IBD增加肠系膜动脉缺血的风险,其风险达1-6倍^[14,56,57]。而对于外周动脉栓塞,我国目前仍未有流行病学数据研究。

5 IBD和心血管疾病死亡率

即使许多研究显示IBD有增加心血管疾病的风险,但来自系统回顾和Meta分析的研究显示,IBD并不增加由心血管风险导致的死亡率,无论是UC还是CD^[58-61]。

6 结论

总体来说,目前各国对IBD并发心血管风险有了进一步的认识和提高,也提出相应的预防和治疗管理策略。但IBD病因复杂,临床表现多样,同时可继发其他疾病比如CHD、卒中或机会感染作为首要表现,这些会导致我们对IBD并发心血管风险预防和治疗存在认识和重视程度不够,且国内存在流行病学数据不足等情况,对于今后的临床实践,加深对其认识、开展前瞻性、大样本的多中心临床研究,同时进一步做好预防和获益分析,以期更好地为IBD患者制定个体化防治策略。

7 参考文献

1 Ungaro R, Mehandru S, Allen PB, Peyrin-Biroulet L, Colombel

JF. Ulcerative colitis. *Lancet* 2017; 389: 1756-1770 [PMID: 27914657 DOI: 10.1016/S0140-6736(16)32126-2]

2 Torres J, Mehandru S, Colombel JF, Peyrin-Biroulet L. Crohn's disease. *Lancet* 2017; 389: 1741-1755 [PMID: 27914655 DOI: 10.1016/S0140-6736(16)31711-1]

3 Lusis AJ. Atherosclerosis. *Nature* 2000; 407: 233-241 [PMID: 11001066 DOI: 10.1038/35025203]

4 Hansson GK. Inflammation, atherosclerosis, and coronary artery disease. *N Engl J Med* 2005; 352: 1685-1695 [PMID: 15843671 DOI: 10.1056/NEJMra043430]

5 Wu GC, Leng RX, Lu Q, Fan YG, Wang DG, Ye DQ. Subclinical Atherosclerosis in Patients With Inflammatory Bowel Diseases: A Systematic Review and Meta-Analysis. *Angiology* 2017; 68: 447-461 [PMID: 27252243 DOI: 10.1177/0003319716652031]

6 Cappello M, Licata A, Calvaruso V, Bravatà I, Aiello A, Torres D, Della Corte V, Tuttolomondo A, Perticone M, Licata G, Craxì A, Cammà C. Increased expression of markers of early atherosclerosis in patients with inflammatory bowel disease. *Eur J Intern Med* 2017; 37: 83-89 [PMID: 27773555 DOI: 10.1016/j.ejim.2016.10.004]

7 Aslan AN, Sarı C, Özer Sarı S, Tayfur Yürekli Ö, Baştuğ S, Sivri S, Ersoy O, Bozkurt E. Association between aortic stiffness and left ventricular function in inflammatory bowel disease. *Cardiol J* 2016; 23: 202-210 [PMID: 26779973]

8 Fan F, Galvin A, Fang L, White DA, Moore XL, Sparrow M, Cicuttini F, Dart AM. Comparison of inflammation, arterial stiffness and traditional cardiovascular risk factors between rheumatoid arthritis and inflammatory bowel disease. *J Inflamm (Lond)* 2014; 11: 29 [PMID: 25337037 DOI: 10.1186/s12950-014-0029-0]

9 Koutroumpakis E, Ramos-Rivers C, Regueiro M, Hashash JG, Barrie A, Swoger J, Baidoo L, Schwartz M, Dunn MA, Koutroubakis IE, Binion DG. Association Between Long-Term Lipid Profiles and Disease Severity in a Large Cohort of Patients with Inflammatory Bowel Disease. *Dig Dis Sci* 2016; 61: 865-871 [PMID: 26514677 DOI: 10.1007/s10620-015-3932-1]

10 Bernstein CN, Wajda A, Blanchard JF. The incidence of arterial thromboembolic diseases in inflammatory bowel disease: a population-based study. *Clin Gastroenterol Hepatol* 2008; 6: 41-45 [PMID: 18063423 DOI: 10.1016/j.cgh.2007.09.016]

11 Ha C, Magowan S, Accortt NA, Chen J, Stone CD. Risk of arterial thrombotic events in inflammatory bowel disease. *Am J Gastroenterol* 2009; 104: 1445-1451 [PMID: 19491858 DOI: 10.1038/ajg.2009.81]

12 Yarur AJ, Deshpande AR, Pechman DM, Tamariz L, Abreu MT, Sussman DA. Inflammatory bowel disease is associated with an increased incidence of cardiovascular events. *Am J Gastroenterol* 2011; 106: 741-747 [PMID: 21386828 DOI: 10.1038/ajg.2011.63]

13 Singh S, Singh H, Loftus EV Jr, Pardi DS. Risk of cerebrovascular accidents and ischemic heart disease in patients with inflammatory bowel disease: a systematic review and meta-analysis. *Clin Gastroenterol Hepatol* 2014; 12: 382-393.e1 [PMID: 23978350 DOI: 10.1016/j.cgh.2013.08.023]

14 Sridhar AR, Parasa S, Navaneethan U, Crowell MD, Olden K. Comprehensive study of cardiovascular morbidity in hospitalized inflammatory bowel disease patients. *J Crohns Colitis* 2011; 5: 287-294 [PMID: 21683298 DOI: 10.1016/j.crohns.2011.01.011]

15 Osterman MT, Yang YX, Brensinger C, Forde KA, Lichtenstein GR, Lewis JD. No increased risk of myocardial infarction among patients with ulcerative colitis or Crohn's disease. *Clin Gastroenterol Hepatol* 2011; 9: 875-880 [PMID: 21749853 DOI: 10.1016/j.cgh.2011.06.032]

16 Rungoe C, Basit S, Ranthe MF, Wohlfahrt J, Langholz E,

- Jess T. Risk of ischaemic heart disease in patients with inflammatory bowel disease: a nationwide Danish cohort study. *Gut* 2013; 62: 689-694 [PMID: 22961677 DOI: 10.1136/gutjnl-2012-303285]
- 17 Kristensen SL, Ahlehojff O, Lindhardtsen J, Erichsen R, Jensen GV, Torp-Pedersen C, Nielsen OH, Gislason GH, Hansen PR. Disease activity in inflammatory bowel disease is associated with increased risk of myocardial infarction, stroke and cardiovascular death--a Danish nationwide cohort study. *PLoS One* 2013; 8: e56944 [PMID: 23457642 DOI: 10.1371/journal.pone.0056944]
 - 18 Zöller B, Li X, Sundquist J, Sundquist K. Risk of subsequent coronary heart disease in patients hospitalized for immune-mediated diseases: a nationwide follow-up study from Sweden. *PLoS One* 2012; 7: e33442 [PMID: 22438933 DOI: 10.1371/journal.pone.0033442]
 - 19 Tsai MS, Lin CL, Chen HP, Lee PH, Sung FC, Kao CH. Long-term risk of acute coronary syndrome in patients with inflammatory bowel disease: a 13-year nationwide cohort study in an Asian population. *Inflamm Bowel Dis* 2014; 20: 502-507 [PMID: 24412991 DOI: 10.1097/01.MIB.0000441200.10454.4f]
 - 20 Close H, Mason JM, Wilson DW, Hungin AP, Jones R, Rubin G. Risk of Ischaemic Heart Disease in Patients with Inflammatory Bowel Disease: Cohort Study Using the General Practice Research Database. *PLoS One* 2015; 10: e0139745 [PMID: 26461954 DOI: 10.1371/journal.pone.0139745]
 - 21 McAuliffe ME, Lanes S, Leach T, Parikh A, Faich G, Porter J, Holick C, Esposito D, Zhao Y, Fox I. Occurrence of adverse events among patients with inflammatory bowel disease in the HealthCore Integrated Research Database. *Curr Med Res Opin* 2015; 31: 1655-1664 [PMID: 26135040 DOI: 10.1185/03007995.2015.1065242]
 - 22 Barnes EL, Beery RM, Schulman AR, McCarthy EP, Korzenik JR, Winter RW. Hospitalizations for Acute Myocardial Infarction Are Decreased Among Patients with Inflammatory Bowel Disease Using a Nationwide Inpatient Database. *Inflamm Bowel Dis* 2016; 22: 2229-2237 [PMID: 27542135 DOI: 10.1097/MIB.0000000000000899]
 - 23 Card TR, Langan SM, Chu TP. Extra-Gastrointestinal Manifestations of Inflammatory Bowel Disease May Be Less Common Than Previously Reported. *Dig Dis Sci* 2016; 61: 2619-2626 [PMID: 27193564 DOI: 10.1007/s10620-016-4195-1]
 - 24 Emanuel G, Charlton J, Ashworth M, Gulliford MC, Dregan A. Cardiovascular risk assessment and treatment in chronic inflammatory disorders in primary care. *Heart* 2016; 102: 1957-1962 [PMID: 27534979 DOI: 10.1136/heartjnl-2016-310111]
 - 25 Feng W, Chen G, Cai D, Zhao S, Cheng J, Shen H. Inflammatory Bowel Disease and Risk of Ischemic Heart Disease: An Updated Meta-Analysis of Cohort Studies. *J Am Heart Assoc* 2017; 6 [PMID: 28768646 DOI: 10.1161/JAHA.117.005892]
 - 26 Andersohn F, Waring M, Garbe E. Risk of ischemic stroke in patients with Crohn's disease: a population-based nested case-control study. *Inflamm Bowel Dis* 2010; 16: 1387-1392 [PMID: 20014016 DOI: 10.1002/ibd.21187]
 - 27 Dregan A, Charlton J, Chowienzyk P, Gulliford MC. Chronic inflammatory disorders and risk of type 2 diabetes mellitus, coronary heart disease, and stroke: a population-based cohort study. *Circulation* 2014; 130: 837-844 [PMID: 24970784 DOI: 10.1161/CIRCULATIONAHA.114.009990]
 - 28 Zöller B, Li X, Sundquist J, Sundquist K. Risk of subsequent ischemic and hemorrhagic stroke in patients hospitalized for immune-mediated diseases: a nationwide follow-up study from Sweden. *BMC Neurol* 2012; 12: 41 [PMID: 22708578 DOI: 10.1186/1471-2377-12-41]
 - 29 Huang WS, Tseng CH, Chen PC, Tsai CH, Lin CL, Sung FC, Kao CH. Inflammatory bowel diseases increase future ischemic stroke risk: a Taiwanese population-based retrospective cohort study. *Eur J Intern Med* 2014; 25: 561-565 [PMID: 24906568 DOI: 10.1016/j.ejim.2014.05.009]
 - 30 Keller JJ, Wang J, Huang YL, Chou CC, Wang LH, Hsu JL, Bai CH, Chiou HY. Increased risk of stroke among patients with ulcerative colitis: a population-based matched cohort study. *Int J Colorectal Dis* 2014; 29: 805-812 [PMID: 24740513 DOI: 10.1007/s00384-014-1862-6]
 - 31 Keller JJ, Wang J, Hwang YL, Chou CC, Wang LH, Hsu JL, Bai CH, Chiou HY. Increased risk of stroke among patients with Crohn's disease: a population-based matched cohort study. *Int J Colorectal Dis* 2015; 30: 645-653 [PMID: 25608496 DOI: 10.1007/s00384-015-2132-y]
 - 32 Kristensen SL, Lindhardtsen J, Ahlehojff O, Erichsen R, Lamberts M, Khalid U, Torp-Pedersen C, Nielsen OH, Gislason GH, Hansen PR. Increased risk of atrial fibrillation and stroke during active stages of inflammatory bowel disease: a nationwide study. *Europace* 2014; 16: 477-484 [PMID: 24108228 DOI: 10.1093/europace/eut312]
 - 33 Xiao Z, Pei Z, Yuan M, Li X, Chen S, Xu L. Risk of Stroke in Patients with Inflammatory Bowel Disease: A Systematic Review and Meta-analysis. *J Stroke Cerebrovasc Dis* 2015; 24: 2774-2780 [PMID: 26360973 DOI: 10.1016/j.jstrokecerebrovasdis.2015.08.008]
 - 34 Yuan M, Zhou HY, Xiao XL, Wang ZQ, Yao-Zhi, Yin XP. Inflammatory bowel disease and risk of stroke: A meta-analysis of cohort studies. *Int J Cardiol* 2016; 202: 106-109 [PMID: 26386936 DOI: 10.1016/j.ijcard.2015.08.190]
 - 35 Geerts WH, Bergqvist D, Pineo GF, Heit JA, Samama CM, Lassen MR, Colwell CW. Prevention of venous thromboembolism: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (8th Edition). *Chest* 2008; 133: 381S-453S [PMID: 18574271 DOI: 10.1378/chest.08-0656]
 - 36 Razik R, Bernstein CN, Sam J, Thanabalan R, Nguyen GC. Survey of perceptions and practices among Canadian gastroenterologists regarding the prevention of venous thromboembolism for hospitalized inflammatory bowel disease patients. *Can J Gastroenterol* 2012; 26: 795-798 [PMID: 23166902]
 - 37 Tinsley A, Naymagon S, Trindade AJ, Sachar DB, Sands BE, Ullman TA. A survey of current practice of venous thromboembolism prophylaxis in hospitalized inflammatory bowel disease patients in the United States. *J Clin Gastroenterol* 2013; 47: e1-e6 [PMID: 22476043 DOI: 10.1097/MCG.0b013e31824c0dea]
 - 38 Sam JJ, Bernstein CN, Razik R, Thanabalan R, Nguyen GC. Physicians' perceptions of risks and practices in venous thromboembolism prophylaxis in inflammatory bowel disease. *Dig Dis Sci* 2013; 58: 46-52 [PMID: 23053902 DOI: 10.1007/s10620-012-2435-6]
 - 39 Yuhara H, Steinmaus C, Corley D, Koike J, Igarashi M, Suzuki T, Mine T. Meta-analysis: the risk of venous thromboembolism in patients with inflammatory bowel disease. *Aliment Pharmacol Ther* 2013; 37: 953-962 [PMID: 23550660 DOI: 10.1111/apt.12294]
 - 40 Alatri A, Schoepfer A, Fournier N, Engelberger RP, Safroneeva E, Vavricka S, Biedermann L, Calanca L, Mazzolai L; Swiss IBD Cohort Study Group. Prevalence and risk factors for venous thromboembolic complications in the Swiss Inflammatory Bowel Disease Cohort. *Scand J Gastroenterol* 2016; 51: 1200-1205 [PMID: 27211077 DOI: 10.1080/00365521.2016.1185464]

- 41 Kuy S, Dua A, Chappidi R, Seabrook G, Brown KR, Lewis B, Rossi PJ, Lee CJ. The increasing incidence of thromboembolic events among hospitalized patients with inflammatory bowel disease. *Vascular* 2015; 23: 260-264 [PMID: 24986868 DOI: 10.1177/1708538114541799]
- 42 Novacek G, Weltermann A, Sobala A, Tilg H, Petritsch W, Reinisch W, Mayer A, Haas T, Kaser A, Feichtenschlager T, Fuchssteiner H, Knoflach P, Vogelsang H, Miehsler W, Platzer R, Tillinger W, Jaritz B, Schmid A, Blaha B, Dejaco C, Eichinger S. Inflammatory bowel disease is a risk factor for recurrent venous thromboembolism. *Gastroenterology* 2010; 139: 779-787, 787.e1 [PMID: 20546736 DOI: 10.1053/j.gastro.2010.05.026]
- 43 Canero A, Parmeggiani D, Avenia N, Atelli PF, Goffredi L, Peltrini R, Madonna I, Ambrosino P, Apperti S, Apperti M. Thromboembolic tendency (TE) in IBD (Inflammatory bowel disease) patients. *Ann Ital Chir* 2012; 83: 313-317 [PMID: 22759469]
- 44 Wilson MZ, Connelly TM, Tinsley A, Hollenbeak CS, Koltun WA, Messaris E. Ulcerative Colitis Is Associated With an Increased Risk of Venous Thromboembolism in the Postoperative Period: The Results of a Matched Cohort Analysis. *Ann Surg* 2015; 261: 1160-1166 [PMID: 24983992 DOI: 10.1097/SLA.0000000000000788]
- 45 Wallaert JB, De Martino RR, Marsicovetere PS, Goodney PP, Finlayson SR, Murray JJ, Holubar SD. Venous thromboembolism after surgery for inflammatory bowel disease: are there modifiable risk factors? Data from ACS NSQIP. *Dis Colon Rectum* 2012; 55: 1138-1144 [PMID: 23044674 DOI: 10.1097/DCR.0b013e3182698f60]
- 46 Brady MT, Patts GJ, Rosen A, Kasotakis G, Siracuse JJ, Sachs T, Kuhnen A, Kunitake H. Postoperative Venous Thromboembolism in Patients Undergoing Abdominal Surgery for IBD: A Common but Rarely Addressed Problem. *Dis Colon Rectum* 2017; 60: 61-67 [PMID: 27926558 DOI: 10.1097/DCR.0000000000000721]
- 47 Van Assche G, Dignass A, Reinisch W, van der Woude CJ, Sturm A, De Vos M, Guslandi M, Oldenburg B, Dotan I, Marteau P, Ardizzone A, Baumgart DC, D'Haens G, Gionchetti P, Portela F, Vucelic B, Söderholm J, Escher J, Koletzko S, Kolho KL, Lukas M, Mottet C, Tilg H, Vermeire S, Carbonnel F, Cole A, Novacek G, Reinshagen M, Tsianos E, Herrlinger K, Oldenburg B, Bouhnik Y, Kiesslich R, Stange E, Travis S, Lindsay J; European Crohn's and Colitis Organisation (ECCO). The second European evidence-based Consensus on the diagnosis and management of Crohn's disease: Special situations. *J Crohns Colitis* 2010; 4: 63-101 [PMID: 21122490 DOI: 10.1016/j.crohns.2009.09.009]
- 48 Gionchetti P, Dignass A, Danese S, Magro Dias FJ, Rogler G, Lakatos PL, Adamina M, Ardizzone S, Buskens CJ, Sebastian S, Laureti S, Sampietro GM, Vucelic B, van der Woude CJ, Barreiro-de Acosta M, Maaser C, Portela F, Vavricka SR, Gomollón F; ECCO. 3rd European Evidence-based Consensus on the Diagnosis and Management of Crohn's Disease 2016: Part 2: Surgical Management and Special Situations. *J Crohns Colitis* 2017; 11: 135-149 [PMID: 27660342 DOI: 10.1093/ecco-jcc/jjw169]
- 49 Dignass A, Lindsay JO, Sturm A, Windsor A, Colombel JF, Allez M, D'Haens G, D'Hoore A, Mantzaris G, Novacek G, Oresland T, Reinisch W, Sans M, Stange E, Vermeire S, Travis S, Van Assche G. Second European evidence-based consensus on the diagnosis and management of ulcerative colitis part 2: current management. *J Crohns Colitis* 2012; 6: 991-1030 [PMID: 23040451 DOI: 10.1016/j.crohns.2012.09.002]
- 50 Harbord M, Eliakim R, Bettenworth D, Karmiris K, Katsanos K, Kopylov U, Kucharzik T, Molnár T, Raine T, Sebastian S, de Sousa HT, Dignass A, Carbonnel F; European Crohn's and Colitis Organisation [ECCO]. Third European Evidence-based Consensus on Diagnosis and Management of Ulcerative Colitis. Part 2: Current Management. *J Crohns Colitis* 2017; 11: 769-784 [PMID: 28513805 DOI: 10.1093/ecco-jcc/jjx009]
- 51 Nguyen GC, Bernstein CN, Bitton A, Chan AK, Griffiths AM, Leontiadis GI, Geerts W, Bressler B, Butzner JD, Carrier M, Chande N, Marshall JK, Williams C, Kearon C. Consensus statements on the risk, prevention, and treatment of venous thromboembolism in inflammatory bowel disease: Canadian Association of Gastroenterology. *Gastroenterology* 2014; 146: 835-848.e6 [PMID: 24462530 DOI: 10.1053/j.gastro.2014.01.042]
- 52 Ananthakrishnan AN, Kane SV. The Toronto consensus guidelines for nonhospitalized ulcerative colitis: a welcome update but not the end of the story. *Gastroenterology* 2015; 148: 877-880 [PMID: 25805424 DOI: 10.1053/j.gastro.2015.03.025]
- 53 Nguyen GC, Seow CH, Maxwell C, Huang V, Leung Y, Jones J, Leontiadis GI, Tse F, Mahadevan U, van der Woude CJ; IBD in Pregnancy Consensus Group; Canadian Association of Gastroenterology. The Toronto Consensus Statements for the Management of Inflammatory Bowel Disease in Pregnancy. *Gastroenterology* 2016; 150: 734-757.e1 [PMID: 26688268 DOI: 10.1053/j.gastro.2015.12.003]
- 54 曹倩, 柳高, 陈梅, 朱韩, 田张, 张缪, 于施. 中国炎症性肠病患者深静脉血栓情况调查: 一项全国多中心回顾性研究. *中华炎性肠病杂志* 2017; 1: 24-28 [DOI: 10.3760/cma.j.issn.2096-367X.2017.01.007]
- 55 中华医学会消化病学分会炎症性肠病学组. 炎症性肠病诊断与治疗的共识意见(2018年, 北京). *中华消化杂志* 2018; 38: 292-311 [DOI: 10.3760/cma.j.issn.0254-1432.2018.05.002]
- 56 Huerta C, Rivero E, Montoro MA, García-Rodríguez LA. Risk factors for intestinal ischaemia among patients registered in a UK primary care database: a nested case-control study. *Aliment Pharmacol Ther* 2011; 33: 969-978 [PMID: 21366637 DOI: 10.1111/j.1365-2036.2011.04614.x]
- 57 Tsai MS, Lin CL, Chen HP, Lee PH, Sung FC, Kao CH. Long-term risk of mesenteric ischemia in patients with inflammatory bowel disease: a 13-year nationwide cohort study in an Asian population. *Am J Surg* 2015; 210: 80-86 [PMID: 25457233 DOI: 10.1016/j.amjsurg.2014.08.026]
- 58 Dorn SD, Sandler RS. Inflammatory bowel disease is not a risk factor for cardiovascular disease mortality: results from a systematic review and meta-analysis. *Am J Gastroenterol* 2007; 102: 662-667 [PMID: 17156143 DOI: 10.1111/j.1572-0241.2006.01018.x]
- 59 Duricova D, Pedersen N, Elkjaer M, Gamborg M, Munkholm P, Jess T. Overall and cause-specific mortality in Crohn's disease: a meta-analysis of population-based studies. *Inflamm Bowel Dis* 2010; 16: 347-353 [PMID: 19572377 DOI: 10.1002/ibd.21007]
- 60 Bewtra M, Kaiser LM, TenHave T, Lewis JD. Crohn's disease and ulcerative colitis are associated with elevated standardized mortality ratios: a meta-analysis. *Inflamm Bowel Dis* 2013; 19: 599-613 [PMID: 23388544 DOI: 10.1097/MIB.0b013e31827f27ae]
- 61 Fumery M, Xiaocang C, Dauchet L, Gower-Rousseau C, Peyrin-Biroulet L, Colombel JF. Thromboembolic events and cardiovascular mortality in inflammatory bowel diseases: a meta-analysis of observational studies. *J Crohns Colitis* 2014; 8: 469-479 [PMID: 24183231 DOI: 10.1016/j.crohns.2013.09.021]

编辑: 崔丽君 电编: 张砚梁





Published by **Baishideng Publishing Group Inc**
7901 Stoneridge Drive, Suite 501, Pleasanton,
CA 94588, USA
Fax: +1-925-223-8242
Telephone: +1-925-223-8243
E-mail: bpgoffice@wjgnet.com
<https://www.wjgnet.com>



ISSN 1009-3079

