

MEDICAL REVIEW

HONORARY EDITOR-IN-CHIEF

Qide Han, Peking University, Beijing, China

COUNSELORS

Yinglu Guo, Peking University Health Science Center, Beijing, China

Jisheng Han, Peking University Health Science Center, Beijing, China

Youyou Tu, China Academy of Traditional Chinese Medicine, Beijing, China

Nanshan Zhong, Guangzhou Medical University, Guangzhou, China

EDITOR-IN-CHIEF

Qimin Zhan, Peking University, Beijing, China

ASSOCIATE EDITORS-IN-CHIEF

Eugene Chen, University of Michigan Medical Center, Michigan, USA

Erdan Dong, Peking University Third Hospital, Beijing, China

Xiaosong Gu, Nantong University, Nantong, China

Joseph C. Kolars, University of Michigan Center for Global Health Equity, Michigan, USA

Lin Lu, Peking University Sixth Hospital, Beijing, China

Xin Lu, Oxford University, England, UK

Albert C. Ludolph, University of Ulm, Wuerttemberg, Germany

Jie Qiao, Peking University, Beijing, China

Hongbing Shen, National Administration for Disease Control and Prevention, Beijing, China

Jun Wang, Peking University People's Hospital, Beijing, China

Ning Zhang, Peking University Health Science Center, Beijing, China

EDITORIAL BOARD MEMBERS

Jiande Chen, University of Michigan School of Medicine, Michigan, USA

Liangyi Chen, Peking University, Beijing, China

Yung-Chi Cheng, Yale University School of Medicine, New Haven, USA

Wendy Chung, Columbia University, New York, USA

Yali Cong, Peking University, Beijing, China

Mark Cooper, Monash University, Melbourne, Australia

Xuliang Deng, Peking University School of Stomatology, Beijing, China

Jubao Duan, The University of Chicago and NorthShore University HealthSystem, Evanston, USA

Xin Gao, King Abdullah University of Science and Technology, Saudi Arabia

Kan Gong, Peking University First Hospital, Beijing, China

Jun Guo, Beijing Cancer Hospital, Beijing, China

Ogawa Hideoki, Juntendo University, Japan

Nigel Hooper, The University of Manchester, Manchester, United Kingdom

Bo Huang, China Academy of Sciences, Beijing, China

Xiaojun Huang, Peking University People's Hospital, Beijing, China

Yu Huang, City University of Hong Kong, Hong Kong, China

Jiafu Ji, Beijing Cancer Hospital, Beijing, China

Rurong Ji, Duke University, USA

Baoguo Jiang, Peking University People's Hospital, Beijing, China

Yonghui Jiang, Yale University School of Medicine, New Haven, USA

Wei Kong, Peking University, Beijing, China

Qunying Lei, Fudan University, Shanghai, China

Hang Li, Peking University First Hospital, Beijing, China

Liming Li, Peking University, Beijing, China

Pengda Liu, University of North Carolina at Chapel Hill, Chapel Hill, USA

Xinliang Ma, Thomas Jefferson University, Philadelphia, USA

Qingyue Meng, Peking University, Beijing, China

Hattori Nobutaka, Juntendo University, Japan

Thomas Penzel, Charité University Hospital, Berlin, Germany

Lizheng Shi, Tulane University, Los Angeles, USA

Chunli Song, Peking University Third Hospital, Beijing, China

Lunquan Sun, Central South University, Changsha, China

Zheng Sun, Baylor College of Medicine, Houston, USA

Fuchou Tang, Peking University, Beijing, China

Igor Tsigelny, University of California, San Diego, La Jolla, USA

Pengfei Tu, Peking University, Beijing, China

You Wan, Peking University, Beijing, China

Xiaobin Wang, Johns Hopkins University School of Medicine, Baltimore, USA

Yajing Wang, University of Alabama at Birmingham, Birmingham, USA

Chun-Ming Wong, The University of Hong Kong, Hong Kong, China

Tian Xia, University of California Los Angeles, Los Angeles, USA

Baoji Xu, University of Florida, Jupiter, USA

Dong Xu, University of Missouri-Columbia, Missouri, USA

Jiake Xu, The University of Western Australia, Perth, Australia

Ming Xu, Peking University Third Hospital, Beijing, China

Yong Xu, Baylor College of Medicine, Houston, USA

Li Yang, Peking University First Hospital, Beijing, China

Bing Ye, University of Michigan, Michigan, USA

Min Ye, Peking University, Beijing, China

Weihua Yue, Peking University Sixth Hospital, Beijing, China

Musheng Zeng, Sun Yat-sen University, Guangzhou, China

Siyan Zhan, Peking University, Beijing, China

Zuofeng Zhang, University of California, Los Angeles, USA

Cheng Zhou, Peking University, Beijing, China

Yongsheng Zhou, Peking University Hospital of Stomatology, Beijing, China

MANAGING EDITOR

Yangang Ren, Peking University Health Science Center, Beijing, China

DE GRUYTER

Medical Review (MR) is a peer reviewed open access journal affiliate to Peking University Health Science Centre. MR publishes high-quality internationally competitive review articles on cutting-edge progress and achievement from various areas of medical science, specifically focuses on clinical medicine, basic medicine, preventive medicine, medical ethics and multidisciplinary and emerging topics. MR is also committed to promote fundamental benefits among medical research communities, decision-makers and the public by conscientiously reviewing strategical and macro-level policies on medical-related issues and public health.

SPECIAL STATEMENT

All articles published in this journal represent the views of the authors and do not reflect any official policy of the Medical Review. Authors are solely responsible for their manuscripts and data published in the journals and any mistakes in the published articles. Publication does not constitute endorsement by the journal. No part of the journal should be reproduced or transmitted in any form or by any means without written permission from the journal.

ISSN: 2749-9642

Print ISSN: 2097-0733 (applies for copies in China)

CN: CN 10-1793/R

ONLINE SUBMISSION

<https://mc.manuscriptcentral.com/mr>

All information regarding notes for contributors, online submission, open access, back volumes and orders is available online at www.degruyter.com/mr or www.mrjournal.org

EDITOR-IN-CHIEF Qimin Zhan, Peking University, Beijing, China

EDITORIAL OFFICE No. 38 Xueyuan Road, Haidian District, Beijing 100191, China. Tel.: +86 (010) 82 80 55 81, E-mail: mr@mrjournal.org

RESPONSIBLE INSTITUTION Ministry of Education People's Republic of China

SPONSOR Peking University, No. 5, Yiheyuan Road, Haidian District, Beijing

JOURNAL COORDINATOR Sylvia Szenti, De Gruyter, Genthiner Str. 13, 10785 Berlin, Germany. Tel.: +49 30 260 05 273, E-mail: sylvia.szenti@degruyter.com

ADVERTISEMENTS e-mail: anzeigen@degruyter.com

TYPESETTING TNQ Technologies, Chennai, India

PRINTING Beijing Shengpin Fashion Technology Development Co., Ltd.

Published by Walter de Gruyter GmbH on behalf of
© 2023 Peking University Health Science Center, China

Contents

Special Issue on Clinical Medicine

Editorials

Tian Tian and Jie Qiao

The role of clinical trials in advancing reproductive medicine: a comprehensive overview — 363

Ye Gao, Luowei Wang and Zhaoshen Li

New insights into non-invasive screening of esophageal squamous cell carcinoma — 366

Reviews

Jie Yang, Sicheng Hao, Jiajie Huang, Tianqi Chen, Ruoqi Liu, Ping Zhang, Mengling Feng, Yang He, Wei Xiao, Yucai Hong and Zhongheng Zhang

The application of artificial intelligence in the management of sepsis — 369

Ouyang Chen, Xin Luo and Ru-Rong Ji

Macrophages and microglia in inflammation and neuroinflammation underlying different pain states — 381

Han Cao, Chen Yao and Ying Yuan

Bayesian approach for design and analysis of medical device trials in the era of modern clinical studies — 408

Xiyin Zhang, Yusheng Lin, Narayan S. Hosmane and Yinghuai Zhu

Nanostructured boron agents for boron neutron capture therapy: a review of recent patents — 425

Perspective

Quazi T. H. Shubhra

Iron oxide nanoparticles in magnetic drug targeting and ferroptosis-based cancer therapy — 444