

World Journal of *Cardiology*

World J Cardiol 2024 September 26; 16(9): 496-549



EDITORIAL

- 496 Hypertrophic cardiomyopathy and left ventricular non-compaction: Distinct diseases or variant phenotypes of a single condition?
Przytula N, Dziewięcka E, Winiarczyk M, Graczyk K, Stepien A, Rubis P
- 502 Addressing the alarming link between nonalcoholic fatty liver disease and cardiovascular mortality in men
Hao WR, Cheng CH, Cheng TH
- 508 Recognizing and preventing complications regarding bioresorbable scaffolds during coronary interventions
Latsios G, Koliastasis L, Toutouzas K, Tsioufis K

ORIGINAL ARTICLE**Retrospective Study**

- 512 Contemporary nationwide trends in major adverse cardiovascular events in young cannabis users without concomitant tobacco, alcohol, cocaine use
Desai R, Gurram P, Mohammed AS, Salian RB, Lingamsetty SSP, Guntuku S, Medarametla RVSK, Jahan R, Muslehuddin Z, Ghantasala P
- 522 Medical appraisal of Chinese military aircrew with abnormal results of coronary computed tomographic angiography
Zeng J, Zhao Y, Gao D, Lu X, Dong JJ, Liu YB, Shen B

CASE REPORT

- 531 Intracoronary thrombolysis combined with drug balloon angioplasty in a young ST-segment elevation myocardial infarction patient: A case report
She LQ, Gao DK, Hong L, Tian Y, Wang HZ, Huang S

LETTER TO THE EDITOR

- 542 Left bundle branch area pacing: A new era of cardiac resynchronization therapy?
Caruzzo CA, Rigamonti E, Scopigni FR
- 546 Medical dilemma: Programmed death 1 blockade (sintilimab) therapy in patients suffering from tumours combined with psoriasis
Jin D, Wang YW, Lin ZM, Li C, Li M

ABOUT COVER

Editorial Board Member of *World Journal of Cardiology*, Alexander E Berezin, MD, MSc, PhD, Professor, Department of Internal Medicine, Zaporozhye State Medical University, Zaporozhye 69035, Ukraine. aeberezin@gmail.com

AIMS AND SCOPE

The primary aim of *World Journal of Cardiology (WJC, World J Cardiol)* is to provide scholars and readers from various fields of cardiology with a platform to publish high-quality basic and clinical research articles and communicate their research findings online.

WJC mainly publishes articles reporting research results and findings obtained in the field of cardiology and covering a wide range of topics including acute coronary syndromes, aneurysm, angina, arrhythmias, atherosclerosis, atrial fibrillation, cardiomyopathy, congenital heart disease, coronary artery disease, heart failure, hypertension, imaging, infection, myocardial infarction, pathology, peripheral vessels, public health, Raynaud's syndrome, stroke, thrombosis, and valvular disease.

INDEXING/ABSTRACTING

The WJC is now abstracted and indexed in Emerging Sources Citation Index (Web of Science), PubMed, PubMed Central, Scopus, Reference Citation Analysis, China Science and Technology Journal Database, and Superstar Journals Database. The 2024 Edition of Journal Citation Reports® cites the 2023 journal impact factor (JIF) for WJC as 1.9; JIF without journal self cites: 1.9; 5-year JIF: 2.3; JIF Rank: 123/220 in cardiac and cardiovascular systems; JIF Quartile: Q3; and 5-year JIF Quartile: Q2. The WJC's CiteScore for 2023 is 3.3 and Scopus CiteScore rank 2023: Cardiology and cardiovascular medicine is 189/387.

RESPONSIBLE EDITORS FOR THIS ISSUE

Production Editor: *Ying-Yi Yuan*; Production Department Director: *Xiang Li*; Cover Editor: *Yun-Xiaoqiao Wu*.

NAME OF JOURNAL

World Journal of Cardiology

ISSN

ISSN 1949-8462 (online)

LAUNCH DATE

December 31, 2009

FREQUENCY

Monthly

EDITORS-IN-CHIEF

Ramdas G Pai, Dimitrios Tousoulis, Marco Matteo Ciccone, Pal Pacher

EDITORIAL BOARD MEMBERS

<https://www.wjgnet.com/1949-8462/editorialboard.htm>

PUBLICATION DATE

September 26, 2024

COPYRIGHT

© 2024 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>

Medical dilemma: Programmed death 1 blockade (sintilimab) therapy in patients suffering from tumours combined with psoriasis

Di Jin, Yu-Wei Wang, Zhi-Min Lin, Chen Li, Ming Li

Specialty type: Dermatology

Provenance and peer review:

Invited article; Externally peer reviewed.

Peer-review model: Single blind

Peer-review report's classification

Scientific Quality: Grade B, Grade D

Novelty: Grade B, Grade B

Creativity or Innovation: Grade B, Grade C

Scientific Significance: Grade A, Grade B

P-Reviewer: Yerolatsite M

Received: June 15, 2024

Revised: August 16, 2024

Accepted: September 10, 2024

Published online: September 26, 2024

Processing time: 96 Days and 6.4 Hours



Di Jin, Ming Li, Department of Rheumatology, Weifang People's Hospital, Weifang 261000, Shandong Province, China

Yu-Wei Wang, Department of Cardiology, Yidu Central Hospital of Weifang, Weifang 261000, Shandong Province, China

Zhi-Min Lin, Third Affiliated Hospital, Beijing University of Chinese Medicine, Beijing 100020, China

Chen Li, Department of Rheumatology, Fangshan Hospital, Beijing University of Chinese Medicine, Beijing 102400, China

Co-first authors: Di Jin and Yu-Wei Wang.

Co-corresponding authors: Ming Li and Chen Li.

Corresponding author: Ming Li, MD, Chief Doctor, Staff Physician, Department of Rheumatology, Weifang People's Hospital, No. 151 Guangwen Street, Kuiwen District, Weifang 261000, Shandong Province, China. lalwlm@aliyun.com

Abstract

Tumour immunotherapy represented by immune checkpoint inhibitors (ICIs) has greatly improved the overall prognosis of patients with malignant tumours, and is regarded as an important breakthrough in the field of medicine in recent years. ICIs have gradually become the core of tumour therapy and are increasingly used in the clinic. In order to achieve early clinical prediction and management of immune-related adverse events (irAEs), it is still necessary to perform further research on the mechanisms, risk factors, and predictors of irAE occurrence in the future. Zhou *et al* describe the consultation of a patient with advanced gastric cancer combined with chronic plaque psoriasis. This case provides an important reference for the use of programmed cell death protein-1 (PD-1) inhibitors in patients of tumours combined with chronic plaque psoriasis. This case also highlights that screening of high-risk groups for irAEs is critical before applying PD-1 inhibitors to patients with chronic psoriasis combined with tumours. PD-1 inhibitors are new and potent antineoplastic agents that can cause serious immune-related adverse events such as toxic epidermal necrolysis release and psoriasis. Glucocorticosteroids are the first-line agents for irAEs. The incidence of rheumatic irAEs may be higher in reality, which will inevitably become a new challenge for rheumatologists and dermatologists.

Key Words: Immune checkpoint inhibitors; Tumor immunotherapy; Immune-related adverse events; Cytokine release syndrome; Psoriasis

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

Core Tip: The major strategies for dealing with immune-related adverse events should include scientific awareness, early diagnosis and graded management. The important direction of tumour immunotherapy research is how to reduce the adverse effects of immunotherapy and can improve the quality of patient survival. The correlation between programmed cell death protein-1 inhibitors and chronic psoriasis is gradually receiving more and more attention, and how to screen high-risk populations in the future, as well as to give the necessary and effective preventive therapeutic measures still need to be further explored.

Citation: Jin D, Wang YW, Lin ZM, Li C, Li M. Medical dilemma: Programmed death 1 blockade (sintilimab) therapy in patients suffering from tumours combined with psoriasis. *World J Cardiol* 2024; 16(9): 546-549

URL: <https://www.wjgnet.com/1949-8462/full/v16/i9/546.htm>

DOI: <https://dx.doi.org/10.4330/wjc.v16.i9.546>

TO THE EDITOR

Tumor immunotherapy, using immune checkpoint inhibitors (ICIs), has greatly improved the prognosis of patients with malignant tumors. ICIs are regarded as essential breakthroughs in recent years[1]. With the outstanding therapeutic effects of immunotherapy in clinical practice and the gradual expansion of its applications, a series of immune-related adverse events (irAEs) have become increasingly common[2]. Currently, ICIs mainly target cytotoxic T lymphocyte-associated antigen 4 (CTLA-4), programmed cell death protein-1 (PD-1), and programmed cell death ligand-1 (PD-L1). The latest data from the United States show that almost half of the patients with malignant tumors meet the indications for ICIs therapy[3]. Therefore, ICIs have gradually become the core of tumor therapy and are increasingly used in clinical settings. To achieve early clinical prediction and management of irAEs, further research on their mechanisms, risk factors, and predictors is necessary.

PD-1 INHIBITORS IN TUMOR-PSORIASIS

Zhou *et al*[4] described the consultation of a patient with advanced gastric cancer and chronic plaque psoriasis. The patient developed a severe rash with cytokine release syndrome (CRS) after sintilimab treatment. In the present case, the patient presented with a recurrent rash as the first manifestation, followed by acute hyperthermia, hypoxia, and progressive exacerbation of skin lesions, which were life-threatening and resulted in CRS. The patient was treated effectively with glucocorticoids, tolizumab, and acitretin. The glucocorticoid dose was gradually reduced, and the rash did not recur. This case provides an essential reference for using PD-1 inhibitors in patients with tumors and chronic plaque psoriasis. This case also highlights the importance of screening high-risk groups for irAEs among patients with chronic psoriasis.

IrAEs are similar to the pathogenesis of rheumatic immune diseases and can mimic most rheumatic immune diseases, such as arthritis, rheumatic polymyalgia, myositis, and psoriasis. Previous clinical trials have shown that 54%–76% of patients have different degrees of irAEs. Therefore, ICI-related irAEs have gradually become a topical and challenging issue in tumor immunotherapy[3]. The risk factors for irAEs include gender, body mass index, tumor type, drug type, and history of autoimmune disease. Predictive factors include immune cells, cytokines, chemokines, autoantibodies, the genome, and intestinal flora. For example, sex hormones lead to sex differences in immune responses, and women are more likely to develop autoimmune diseases. Bui *et al*[5] conducted a retrospective analysis of 235 patients with melanoma and found that women were more prone to skin irAEs. Cortellini *et al*[6] found a significant correlation between a high BMI and the occurrence of irAEs. Patients who are overweight ($25 \text{ kg/m}^2 \leq \text{BMI} \leq 29.9 \text{ kg/m}^2$) are more likely to develop irAE related to the skin, endocrine system, gastrointestinal tract, and liver. A meta-analysis of 5560 patients in clinical trials showed that 18.4% of patients treated with ICIs developed rheumatic irAEs[7]. Almost all clinical trials excluded patients with comorbid rheumatological diseases (*e.g.*, rheumatoid arthritis, spondyloarthritis, and vasculitis). Therefore, the incidence of rheumatic irAEs may be high, which will inevitably become a new challenge for rheumatologists and dermatologists.

PD-1 inhibitors can cause serious irAEs, such as toxic epidermal necrolysis and psoriasis[8]. The pathogenesis of psoriasis induced by PD-1 inhibitors has not yet been clearly defined. The presence of a genetic susceptibility gene for psoriasis may also be a contributing factor. Morelli *et al*[9] investigated the immunological and genetic profiles of two patients with metastatic melanoma and one patient with lung cancer who developed severe psoriasis after receiving PD-1 inhibitor therapy. NGS analysis revealed that all patients carried several allelic variants in psoriasis susceptibility genes,

such as HLA-C, ERAP1, and other genes of the significant psoriasis susceptibility PSORS1 locus. Previously, there were relatively few case reports on PD-1 inhibitors inducing psoriasis activity. Sui *et al*[10] reported a case of a 56-year-old man with a 25-year history of psoriasis who was first injected with sintilimab (200 mg) for lung adenocarcinoma. Two weeks later, the patient's skin showed generalized red and swollen plaques accompanied with severe itching without obvious cause. A dermatological examination revealed many plaques, scales, scratches, crusts, and pigmentation on the scalp, trunk, and limbs. The patient presented with an acute exacerbation of the typical cutaneous features of plaque psoriasis. The mechanism of PD-1 inhibitors in psoriasis exacerbation may be related to the down-regulation of PD-1 on the surface of the T-cells, which indirectly activates the downstream cytokines, such as interleukin (IL)-1, IL-17, and IL-22[11]. However, for patients who develop severe manifestations of psoriasis, the continuation of PD-1 inhibitors remains a controversial issue, and the future treatment of these patients is highly challenging. The Sui *et al*[10] recommends that the patient should discontinue sintilimab.

The main therapeutic approaches in the treatment of gastric cancer are based on surgery and chemotherapy. Thus, ICIs provide new therapeutic options for patients with gastric cancer[12]. Immune-related skin reactions are the most common side effects of ICI treatment, with an incidence rate of > 50%. Skin lesions are usually mild and do not affect the continuation of immunotherapy. The clinical manifestations vary greatly, and nonspecific macular papules are common[13]. Early diagnosis and timely intervention for irAEs are essential to improve the quality of life of patients with malignant tumors. Glucocorticosteroids are the first-line agents for irAEs, with the dose set according to the criteria for evaluating common adverse event grades and clinical severity. Individualized tapering is performed according to the patient's therapeutic response to glucocorticoids, and some patients may require tumor necrosis factor inhibitors and other monoclonal antibodies to prevent opportunistic infections and reduce the side effects of glucocorticoids.

CONCLUSION

In conclusion, the major strategies for managing irAEs should include scientific awareness, early diagnosis, and graded management. An important direction in tumor immunotherapy research is to reduce the adverse effects of immunotherapy and improve the quality of patient survival. The correlation between PD-1 inhibitors and chronic psoriasis is receiving increasing attention, and further research is required to identify high-risk populations.

FOOTNOTES

Author contributions: Jin D and Wang YW prepared the manuscript and contributed equally to this article, ensuring a cohesive presentation of the research findings; Jin D and Lin ZM were responsible for the meticulous analysis and interpretation of the case, providing essential insights that underpinned the study's conclusions; Li C and Li M were at the helm of conceptualizing and designing the research ideas, setting the stage for the study with their innovative and well-defined framework; All authors have read and approved the final manuscript, with Jin D and Wang YW recognized as co-first authors for their significant contributions to the manuscript preparation, and the collaborative efforts of the team were instrumental in bringing the research to fruition.

Supported by Weifang Health Commission's Scientific Research Program, No. WFWSJK-2023-222 and No. WFWSJK-2023-240; and the Weifang Young Medical Talent Support Project.

Conflict-of-interest statement: All the authors declare that they have no conflict of interest.

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: Chen Li [0000-0002-8527-1680](https://orcid.org/0000-0002-8527-1680).

S-Editor: Liu JH

L-Editor: A

P-Editor: Wang WB

REFERENCES

- 1 Robert C. A decade of immune-checkpoint inhibitors in cancer therapy. *Nat Commun* 2020; **11**: 3801 [PMID: [32732879](https://pubmed.ncbi.nlm.nih.gov/32732879/) DOI: [10.1038/s41467-020-17670-y](https://doi.org/10.1038/s41467-020-17670-y)]
- 2 Fan Y, Geng Y, Shen L, Zhang Z. Advances on immune-related adverse events associated with immune checkpoint inhibitors. *Front Med* 2021; **15**: 33-42 [PMID: [32779094](https://pubmed.ncbi.nlm.nih.gov/32779094/) DOI: [10.1007/s11684-019-0735-3](https://doi.org/10.1007/s11684-019-0735-3)]
- 3 Johnson DB, Nebhan CA, Moslehi JJ, Balko JM. Immune-checkpoint inhibitors: long-term implications of toxicity. *Nat Rev Clin Oncol* 2022;

- 19: 254-267 [PMID: 35082367 DOI: 10.1038/s41571-022-00600-w]
- 4 **Zhou MH**, Ye MF, Zhang ZX, Tao F, Zhang Y. Cytokine release syndrome triggered by programmed death 1 blockade (sintilimab) therapy in a psoriasis patient: A case report. *World J Clin Cases* 2024; **12**: 3555-3560 [PMID: 38983424 DOI: 10.12998/wjcc.v12.i18.3555]
 - 5 **Bui AN**, Bougrine A, Buchbinder EI, Giobbie-Hurder A, LeBoeuf NR. Female sex is associated with higher rates of dermatologic adverse events among patients with melanoma receiving immune checkpoint inhibitor therapy: A retrospective cohort study. *J Am Acad Dermatol* 2022; **87**: 403-406 [PMID: 34252467 DOI: 10.1016/j.jaad.2021.06.885]
 - 6 **Cortellini A**, Bersanelli M, Buti S, Cannita K, Santini D, Perrone F, Giusti R, Tiseo M, Michiara M, Di Marino P, Tinari N, De Tursi M, Zoratto F, Veltri E, Marconcini R, Malorgio F, Russano M, Anesi C, Zeppola T, Filetti M, Marchetti P, Botticelli A, Antonini Cappellini GC, De Galitiis F, Vitale MG, Rastelli F, Pergolesi F, Berardi R, Rinaldi S, Tudini M, Silva RR, Pireddu A, Atzori F, Chiari R, Ricciuti B, De Giglio A, Iacono D, Gelibter A, Occhipinti MA, Parisi A, Porzio G, Fargnoli MC, Ascierto PA, Ficorella C, Natoli C. A multicenter study of body mass index in cancer patients treated with anti-PD-1/PD-L1 immune checkpoint inhibitors: when overweight becomes favorable. *J Immunother Cancer* 2019; **7**: 57 [PMID: 30813970 DOI: 10.1186/s40425-019-0527-y]
 - 7 **Zhang S**, Zhou Z, Wang L, Li M, Zhang F, Zeng X. Rheumatic immune-related adverse events associated with immune checkpoint inhibitors compared with placebo in oncologic patients: a systemic review and meta-analysis. *Ther Adv Chronic Dis* 2021; **12**: 2040622320976996 [PMID: 33633822 DOI: 10.1177/2040622320976996]
 - 8 **Di Altobrando A**, Bruni F, Alessandrini A, Starace M, Misciali C, Piraccini BM. Severe de-novo palmoplantar and nail psoriasis complicating Nivolumab treatment for metastatic melanoma. *Dermatol Ther* 2020; **33**: e13363 [PMID: 32239596 DOI: 10.1111/dth.13363]
 - 9 **Morelli M**, Carbone ML, Scaglione GL, Scarponi C, Di Francesco V, Pallotta S, De Galitiis F, Rahimi S, Madonna S, Failla CM, Albanesi C. Identification of immunological patterns characterizing immune-related psoriasis reactions in oncological patients in therapy with anti-PD-1 checkpoint inhibitors. *Front Immunol* 2024; **15**: 1346687 [PMID: 38495872 DOI: 10.3389/fimmu.2024.1346687]
 - 10 **Sui CL**, Lin XF, He L, Zhu W. Dermoscopic features of acutely exacerbated plaque psoriasis induced by anti-programmed death-1 for lung cancer. *Chin Med J (Engl)* 2020; **133**: 2123-2125 [PMID: 32769492 DOI: 10.1097/CM9.0000000000000958]
 - 11 **Bartosińska J**, Zakrzewska E, Purkot J, Michalak-Stoma A, Kowal M, Krasowska D, Chodorowska G, Giannopoulos K. Decreased blood CD4+PD-1+ and CD8+PD-1+ T cells in psoriatic patients with and without arthritis. *Postepy Dermatol Alergol* 2018; **35**: 344-350 [PMID: 30206445 DOI: 10.5114/ada.2018.75609]
 - 12 **Sun J**, Zheng Y, Mamun M, Li X, Chen X, Gao Y. Research progress of PD-1/PD-L1 immunotherapy in gastrointestinal tumors. *Biomed Pharmacother* 2020; **129**: 110504 [PMID: 32768978 DOI: 10.1016/j.biopha.2020.110504]
 - 13 **Haanen J**, Obeid M, Spain L, Carbonnel F, Wang Y, Robert C, Lyon AR, Wick W, Kostine M, Peters S, Jordan K, Larkin J; ESMO Guidelines Committee. Management of toxicities from immunotherapy: ESMO Clinical Practice Guideline for diagnosis, treatment and follow-up. *Ann Oncol* 2022; **33**: 1217-1238 [PMID: 36270461 DOI: 10.1016/j.annonc.2022.10.001]



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

Telephone: +1-925-3991568

E-mail: office@baishideng.com

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

<https://www.wjgnet.com>

