

World Journal of *Diabetes*

World J Diabetes 2024 July 15; 15(7): 1384-1653



EDITORIAL

- 1384 Remission of type 2 diabetes mellitus
Nakhleh A, Halfin E, Shehadeh N
- 1390 Diabetes remission and nonalcoholic fatty pancreas disease
Wu WJ
- 1394 Management of gestational diabetes mellitus *via* nutritional interventions: The relevance of gastric emptying
Huang WK, Jalleh RJ, Rayner CK, Wu TZ
- 1398 MicroRNA-630: A promising avenue for alleviating inflammation in diabetic kidney disease
Donate-Correa J, González-Luis A, Díaz-Vera J, Hernandez-Fernaud JR
- 1404 Adiposity in Chinese people with type 1 diabetes
Wu NW, Lyu XF, An ZM, Li SY
- 1409 Diabetes and tuberculosis: An emerging dual threat to healthcare
Shetty S, Pappachan JM, Fernandez CJ

REVIEW

- 1417 Patient-centered care in diabetes care-concepts, relationships and practice
Chen TT, Su WC, Liu MI
- 1430 Insulin resistance as the molecular link between diabetes and Alzheimer's disease
Abdalla MMI

MINIREVIEWS

- 1448 Obstructive sleep apnea: Overlooked comorbidity in patients with diabetes
Tenda ED, Henrina J, Cha JH, Triono MR, Putri EA, Aristy DJ, Tahapary DL
- 1461 Update on evidence-based clinical application of sodium-glucose cotransporter inhibitors: Insight to uncommon cardiovascular disease scenarios in diabetes
Tao SB, Lu X, Ye ZW, Tong NW

ORIGINAL ARTICLE**Retrospective Cohort Study**

- 1477 Association between glucose levels of children with type 1 diabetes and parental economic status in mobile health application

Zhang WH, Wang CF, Wang H, Tang J, Zhang HQ, Zhu JY, Zheng XY, Luo SH, Ding Y

Retrospective Study

- 1489 Association between glucose-lowering drugs and circulating insulin antibodies induced by insulin therapy in patients with type 2 diabetes

Zhang P, Jiang Q, Ding B, Yan RN, Hu Y, Ma JH

- 1499 Clinical efficacy of endovascular revascularization combined with vacuum-assisted closure for the treatment of diabetic foot

Lei FR, Shen XF, Zhang C, Li XQ, Zhuang H, Sang HF

- 1509 Magnetic resonance imaging combined with serum endolipin and galactaglobin-3 to diagnose cerebral infarction in the elderly with diabetes mellitus

Zhang YH, Liang D

- 1518 Dapagliflozin in heart failure and type 2 diabetes: Efficacy, cardiac and renal effects, safety

Yu PL, Yu Y, Li S, Mu BC, Nan MH, Pang M

Observational Study

- 1531 Cut-off value of glycated hemoglobin A1c for detecting diabetic retinopathy in the Chinese population

Wen Y, Wang Q

- 1537 Glymphatic function and its influencing factors in different glucose metabolism states

Tian B, Zhao C, Liang JL, Zhang HT, Xu YF, Zheng HL, Zhou J, Gong JN, Lu ST, Zeng ZS

Clinical and Translational Research

- 1551 Does type 1 diabetes serve as a protective factor against inflammatory bowel disease: A Mendelian randomization study

Tong KK, Yu YF, Yang XY, Wu JY, Yu R, Tan CC

- 1562 Network pharmacology and molecular dynamics study of the effect of the *Astragalus-Coptis* drug pair on diabetic kidney disease

Zhang MY, Zheng SQ

Basic Study

- 1589 Interactions between myoblasts and macrophages under high glucose milieu result in inflammatory response and impaired insulin sensitivity

Luo W, Zhou Y, Wang LY, Ai L

SYSTEMATIC REVIEWS

- 1603** Natural product-based treatment potential for type 2 diabetes mellitus and cardiovascular disease
Shrivastav D, Kumbhakar SK, Srivastava S, Singh DD

META-ANALYSIS

- 1615** Evaluation of teplizumab's efficacy and safety in treatment of type 1 diabetes mellitus: A systematic review and meta-analysis
Ma XL, Ge D, Hu XJ

SCIENTOMETRICS

- 1627** Global trends in publications regarding macrophages-related diabetic foot ulcers in the last two decades
Wen JP, Ou SJ, Liu JB, Zhang W, Qu YD, Li JX, Xia CL, Yang Y, Qi Y, Xu CP

LETTER TO THE EDITOR

- 1645** Atrial fibrillation and prediabetes: A liaison that merits attention!
Batta A, Hatwal J
- 1648** Serum tumor markers: Can they clinically implicate in type 2 diabetes mellitus?
Reddy KS, Pandiaraj IP, Gaur A, Varatharajan S
- 1651** Bidirectional link between periodontitis and systemic inflammation in diabetic retinopathy
Nishant P, Sinha S, Sinha RK, Morya AK

ABOUT COVER

Peer Review of *World Journal of Diabetes*, Erkan Gokce, MD, Professor, Department of Radiology, Tokat Gaziosmanpasa University, School of Medicine, Tokat 60100, Türkiye. drerkangokce@gmail.com

AIMS AND SCOPE

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

WJD mainly publishes articles reporting research results and findings obtained in the field of diabetes and covering a wide range of topics including risk factors for diabetes, diabetes complications, experimental diabetes mellitus, type 1 diabetes mellitus, type 2 diabetes mellitus, gestational diabetes, diabetic angiopathies, diabetic cardiomyopathies, diabetic coma, diabetic ketoacidosis, diabetic nephropathies, diabetic neuropathies, Donohue syndrome, fetal macrosomia, and prediabetic state.

INDEXING/ABSTRACTING

The *WJD* 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 2024 Edition of Journal Citation Reports® cites the 2023 journal impact factor (JIF) for *WJD* as 4.2; JIF without journal self cites: 4.1; 5-year JIF: 4.2; JIF Rank: 40/186 in endocrinology and metabolism; JIF Quartile: Q1; and 5-year JIF Quartile: Q2.

RESPONSIBLE EDITORS FOR THIS ISSUE

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

NAME OF JOURNAL

World Journal of Diabetes

ISSN

ISSN 1948-9358 (online)

LAUNCH DATE

June 15, 2010

FREQUENCY

Monthly

EDITORS-IN-CHIEF

Lu Cai, Md. Shahidul Islam, Michael Horowitz

EDITORIAL BOARD MEMBERS

<https://www.wjgnet.com/1948-9358/editorialboard.htm>

PUBLICATION DATE

July 15, 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>

Serum tumor markers: Can they clinically implicate in type 2 diabetes mellitus?

Kotha Sugunakar Reddy, Ilakkiya Priya Pandiaraj, Archana Gaur, Sakthivadivel Varatharajan

Specialty type: Endocrinology and metabolism

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 A

Scientific Significance: Grade A

P-Reviewer: Herold Z, Hungary

Received: March 18, 2024

Revised: May 8, 2024

Accepted: May 24, 2024

Published online: July 15, 2024

Processing time: 111 Days and 23.1 Hours



Kotha Sugunakar Reddy, Ilakkiya Priya Pandiaraj, Sakthivadivel Varatharajan, Department of General Medicine, All India Institute of Medical Sciences, Hyderabad 508126, Telangana, India

Archana Gaur, Department of Physiology, All India Institute of Medical Sciences, Hyderabad 508126, Telangana, India

Corresponding author: Sakthivadivel Varatharajan, MBBS, MD, Additional Professor, Department of General Medicine, All India Institute of Medical Sciences, Varatharajan Sakthivadivel, Hyderabad 508126, Telangana, India. vsakthivadivel28@gmail.com

Abstract

“Serum tumor markers expression (CA19-9, CA242, and CEA) and its clinical implications in type 2 diabetes mellitus” authored by Meng and Shi presents an observational case-control study investigating the correlation between tumor markers and type 2 diabetes mellitus (T2DM). The study explores the diagnostic accuracy of tumor markers, particularly cancer antigen 19-9 (CA19-9), CA242, and carcinoembryonic antigen, in poorly controlled T2DM patients with hemoglobin A1c levels exceeding 9%, employing receiver operating characteristic curve analysis. Though study offers valuable insights into the potential utility of tumor markers in clinical practice, caution is advised regarding routine tumor marker testing due to challenges such as limited availability and cost. Additionally, the study overlooks potential confounding factors like smoking and alcohol consumption. Variations in CA19-9 and CA242 expression underscore the complex interplay between tumor markers and systemic diseases, warranting further investigation into their diagnostic and prognostic implications. While Meng and Shi represent a significant contribution to the field, more extensive research is needed to fully elucidate the role of tumor markers in diabetes management and beyond.

Key Words: Cancer antigen 19-9; Cancer antigen 242; Carcinoembryonic antigen; Tumor markers; Type 2 diabetes mellitus

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

Core Tip: The study explores the correlation between tumor markers and type 2 diabetes mellitus (T2DM), focusing on cancer antigen 19-9, cancer antigen 242, and carcinoembryonic antigen, in poorly controlled T2DM patients with hemoglobin A1c levels exceeding 9%. While offering insights into their diagnostic accuracy, caution is advised against routine tumor marker testing due to challenges like availability and cost, and confounding factors like smoking and alcohol consumption. Meng and Shi's study is significant, but further research is needed to clarify the role of tumor markers in diabetes management and beyond.

Citation: Reddy KS, Pandiaraj IP, Gaur A, Varatharajan S. Serum tumor markers: Can they clinically implicate in type 2 diabetes mellitus? *World J Diabetes* 2024; 15(7): 1648-1650

URL: <https://www.wjgnet.com/1948-9358/full/v15/i7/1648.htm>

DOI: <https://dx.doi.org/10.4239/wjd.v15.i7.1648>

TO THE EDITOR

We read with great interest a recently published article entitled "Serum tumor markers expression (CA19-9, CA242, and CEA) and its clinical implications in type 2 diabetes mellitus" authored by Meng and Shi[1] published in the *World Journal of Diabetes*. We wish to express our heartfelt gratitude to the authors for their invaluable contribution through the publication of this observational case-control study in your esteemed journal. The study explores the expression of tumor markers such as cancer antigen 19-9 (CA19-9), CA242, carcinoembryonic antigen (CEA) in type 2 diabetes mellitus (T2DM) and their clinical implications. We appreciate the investigators for correlating tumor markers with hemoglobin A1c (HbA1c). The authors' use of receiver operating characteristic curve analysis to evaluate the diagnostic accuracy of tumor markers in patients with poorly controlled T2DM, particularly those with HbA1c levels exceeding 9%, is commendable. This approach not only adds depth to their research but also provides valuable insights into the potential utility of these markers in clinical practice. Furthermore, the inclusion of a substantial number of cases (82) compared to controls (51) enhances the robustness and confidence of the study findings. This balanced approach to sample selection lends credibility to the conclusions drawn and suggests a strong motivation to further explore this research area.

CEA is associated with both malignant and non-malignant conditions, including alcoholic, chronic liver failure, obstructive jaundice and smoking. Smoking can increase CEA levels with normal levels being ≤ 0.3 micrograms per litre and slightly higher levels < 5 micrograms per litre for smokers. Although CEA is cost effective, it has a major drawback due to its low sensitivity[2]. The study under review seems to overlook the potential confounding effects of smoking and alcohol consumption.

The levels of CA19-9 have been observed to be influenced by genotypic variations, particularly in instances where CA19-9 elevation occurs without a clearly attributable pathological condition[3]. Notably, within a cohort of 502 subjects undergoing health screening, 218 individuals exhibited heightened CA19-9 levels without a discernible underlying etiology, with recorded elevations spanning a range from 112 to 1338 U/mL[4,5]. It is important to acknowledge that CA19-9 elevation can occur in benign conditions; thus, caution is warranted in its utilization, particularly in asymptomatic patients, and its role as a screening tool is not endorsed[6]. Moreover, within the context of the present investigation, a statistically significant elevation in tumor markers such as CEA and CA19-9 has been delineated, further emphasizing the relevance of comprehensive tumor marker profiling in diagnostic assessments.

Variations in CA242 expression across diverse gynecological conditions, from benign to neoplastic entities such as uterine polyps and endometrial hyperplasia, highlight the multifaceted nature of this biomarker's involvement in pathophysiological processes[7]. The heterogeneous pattern observed underscores the intricate interplay between CA242 and the underlying disease milieu, suggesting its potential utility in elucidating disease etiology and progression within the gynecological domain. This divergence in expression also hints at CA242's broader role as a marker of systemic homeostasis, where deviations may indicate underlying systemic dysregulation. Moreover, the inverse correlation between CA242 levels and certain systemic conditions, including brain injury sequelae and anemia, elucidates the biomarker's systemic implications beyond gynecological pathology. Emerging evidence linking CA242 levels with T2DM and coronary heart disease, as indicated by \log_{10} *P*-values, supports its potential as a biomarker for systemic malfunction [8]. These observed associations suggest potential mechanistic links between CA242 dysregulation and the pathophysiology of these systemic diseases, warranting further investigation into its diagnostic and prognostic implications beyond gynecological contexts.

Meng and Shi's study undoubtedly contributes significantly to the field, illuminating the fascinating intersection between tumor markers and diabetes management. However, given the studies discussed advocating for larger sample sizes, and potential challenges such as limited availability and high cost associated with these investigations, it is not advisable to recommend routine tumor marker testing for all cases of T2DM based solely on the current strength of evidence.

In essence, the wide range of conditions influencing CA242 expression, along with its associations with systemic diseases, highlights the need for a thorough exploration of its diagnostic and prognostic utility. Continued research efforts in this area hold the potential for harnessing CA242 as a valuable tool in elucidating both gynecological and systemic pathophysiology, thereby advancing clinical management strategies and improving patient outcomes.

FOOTNOTES

Author contributions: Reddy KS designed research; Reddy KS, Pandiaraj IP, and Varatharajan S performed research and revised the letter; Gaur A and Varatharajan S analyzed data; Reddy KS wrote the letter.

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

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

Country of origin: India

ORCID number: Kotha Sugunakar Reddy 0000-0002-1598-5290; Sakthivadivel Varatharajan 0000-0002-5691-670X.

S-Editor: Wang JJ

L-Editor: A

P-Editor: Cai YX

REFERENCES

- 1 **Meng M**, Shi LL. Serum tumor markers expression (CA199, CA242, and CEA) and its clinical implications in type 2 diabetes mellitus. *World J Diabetes* 2024; **15**: 232-239 [PMID: 38464372 DOI: 10.4239/wjd.v15.i2.232]
- 2 **Stevenson RL**. Treasure Island. 2014 [DOI: 10.1017/CBO9781139568456]
- 3 **Kim S**, Park BK, Seo JH, Choi J, Choi JW, Lee CK, Chung JB, Park Y, Kim DW. Carbohydrate antigen 19-9 elevation without evidence of malignant or pancreatobiliary diseases. *Sci Rep* 2020; **10**: 8820 [PMID: 32483216 DOI: 10.1038/s41598-020-65720-8]
- 4 **Tong Y**, Song Z, Zhu W. Study of an elevated carbohydrate antigen 19-9 concentration in a large health check-up cohort in China. *Clin Chem Lab Med* 2013; **51**: 1459-1466 [PMID: 23492572 DOI: 10.1515/cclm-2012-0458]
- 5 **Ventrucci M**, Pozzato P, Cipolla A, Uomo G. Persistent elevation of serum CA 19-9 with no evidence of malignant disease. *Dig Liver Dis* 2009; **41**: 357-363 [PMID: 18602352 DOI: 10.1016/j.dld.2008.04.002]
- 6 **Meira-Júnior JD**, Costa TN, Montagnini AL, Nahas SC, Jukemura J. ELEVATED CA 19-9 IN AN ASYMPTOMATIC PATIENT: WHAT DOES IT MEAN? *Arq Bras Cir Dig* 2022; **35**: e1687 [PMID: 36134819 DOI: 10.1590/0102-672020220002e1687]
- 7 **Zhu J**, Li H. Serum expression of tumor marker CA242 in patients with different gynecological diseases. *Lab Med* 2023; **54**: 613-617 [PMID: 37035887 DOI: 10.1093/labmed/lmad017]
- 8 **Dou H**, Sun G, Zhang L. CA242 as a biomarker for pancreatic cancer and other diseases. *Prog Mol Biol Transl Sci* 2019; **162**: 229-239 [PMID: 30905452 DOI: 10.1016/bs.pmbts.2018.12.007]



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>

