proceedings

Abstract

A Scoping Review on the Serum Biomarkers of Osteosarcopenic Obesity †

Vesna Vucic [1,*], Danijela Ristic-Medic [1], Aleksandra Arsic [1], Snjezana Petrovic [1], Marija Paunovic [1] and Jasminka Z. Ilich [2]

[1] Institute for Medical Research, 11000 Belgrade, Serbia; danijelar@imi.bg.ac.rs (D.R.-M.); aleksandra.arsic@imi.bg.ac.rs (A.A.); snjezana.petrovic@imi.bg.ac.rs (S.P.); marija.paunovic@imi.bg.ac.rs (M.P.)
[2] Institute for Successful Longevity, Florida State University, Tallahassee, FL 32306, USA; jasminkaernst@gmail.com
* Correspondence: vesna.vucic.imr@gmail.com
† Presented at the 14th European Nutrition Conference FENS 2023, Belgrade, Serbia, 14–17 November 2023.

Abstract: Background and objectives: Osteosarcopenic obesity/adiposity (OSO/OSA) syndrome describes the concurrent deterioration of bone, muscle, and adipose tissue. The objective of this review was to evaluate human studies addressing serum biomarkers in relation to OSA. Methods: A search in the PubMed, Scopus, and Web of Science databases was conducted to examine relevant articles published from their inception to the end of March 2023, using the MeSH strings in the search strategy. Only studies published in English and conducted in humans (≥18 years) without chronic diseases (cancers, kidney/liver disease) or pregnancy were used. Book chapters, abstracts only, and studies in which participants did not have all three body composition components measured to identify OSA or in which the body composition components could not be related to the independent/exposure variables were excluded. Results: A total of n = 943 articles were retrieved from all three databases. After removing duplicates and articles unrelated to the topic, only n = 4 studies conducted in South Korea and China met the inclusion criteria. Three studies were cross-sectional while one was retrospective. Of the biomarkers, only serum 25(OH)D and ferritin were studied, showing strong relations with OSA. Discussion: Overall, lower serum vitamin D (<20 ng/mL) and higher serum ferritin were associated with a higher prevalence of OSA. Further research is needed to develop biomarkers for each tissue that, in combination, may indicate the existing impairments and presence of OSA.

Keywords: osteosarcopenic adiposity; osteosarcopenic obesity; OSA; biomarkers

check for updates

Citation: Vucic, V.; Ristic-Medic, D.; Arsic, A.; Petrovic, S.; Paunovic, M.; Ilich, J.Z. A Scoping Review on the Serum Biomarkers of Osteosarcopenic Obesity. *Proceedings* **2023**, *91*, 150. https://doi.org/10.3390/proceedings2023091150

Academic Editors: Sladjana Sobajic and Philip Calder

Published: 1 February 2024

Copyright: © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

Author Contributions: Conceptualization, V.V., D.R.-M. and J.Z.I.; methodology, V.V., D.R.-M., A.A., S.P., M.P. and J.Z.I.; validation, V.V. and J.Z.I.; formal analysis, D.R.-M., A.A., S.P. and M.P.; data curation, V.V.; writing- original draft preparation, V.V.; writing- review and editing, D.R.-M. and S.P.; supervision, V.V. and J.Z.I. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by the Ministry of Science, Technological Development, and Innovation of the Republic of Serbia (No. 451-03-47/2023-01/200015).

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: No new data were created or analyzed in this study. Data sharing is not applicable to this article.

Conflicts of Interest: The authors declare no conflicts of interest.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.