

Proceeding Paper

The Influence of Energy-Restricted Anti-Inflammatory Diet on Innate Immune Response in Obese Patients [†]

Gordana Kendel Jovanović ^{1,*}, Ines Mrakovčić-Šutić ^{2,3}, Ingrid Šutić Udović ^{2,4} and Sanja Klobučar Majanović ^{3,5}

¹ Department of Health Ecology, Teaching Institute of Public Health of Primorsko-Goranska County, Rijeka, Croatia

² Department of Physiology, Immunology and Pathophysiology, University of Rijeka, Medical Faculty, Croatia; ines.mrakovic.sutic@medri.uniri.hr (I.M.-Š.); ingrid.sutic@uniri.hr (I.Š.U.)

³ Department of Basic Medical Sciences, University of Rijeka, Faculty of Health Studies, Croatia; sanja.klobucar@medri.uniri.hr

⁴ Department of Dermatology and Venerology, Clinical Hospital Center Rijeka, Croatia

⁵ Department of Endocrinology, Diabetes and Metabolic Diseases, Clinical Hospital Centre Rijeka, Rijeka

* Correspondence: gordana.kendel-jovanovic@zzjzpgz.hr

[†] Presented at the 2nd International Electronic Conference on Nutrients, 15–31 March 2022; Available online: <https://iecn2022.sciforum.net/>.

Abstract: The current obesity pandemic and related health complications severely impair the quality of life and significantly increase the burden of health care costs. Obesity causes chronic low-grade inflammation, which may cause chronic metabolic disease and complications, and may be accompanied by the activation of the immune system. Activation of the immune system may have a key role in the pathogenesis of metabolic disorders related to obesity. Adipose tissue disorders cause changes in adipose tissue distribution and function, with significant effects on cytokines, chemokines, hormone expression, and the composition of immune cell populations present in adipose tissue. Diet can influence immune system functioning and inflammatory response modulation. This study aimed to analyze the association between diet inflammatory potential, inflammation, and the innate immune response of obese people. In six months, 81 obese patients were monitored during energy-restricted anti-inflammatory diet nutritional intervention (intervention group; IG) and during energy-restricted Clinical Hospital Center Rijeka standard nutrition education protocol (control group; CG). The inflammatory potential of the participant's diet was assessed with the Dietary Inflammatory Index (DII®). Both studied groups statistically significantly reduced markers of inflammation, hs-CRP, IL-6, and TNF- α . The innate immunity (proportion of NK, NKT cells, and Tregs) was significantly decreased in the intervention group. Intervention with an anti-inflammatory diet showed the greatest reduction of these parameters in participants with the highest obesity degree. The use of anti-inflammatory dietary components, besides dietary energy restriction, has a significant impact on the improved immune status of obese people.

Citation: Jovanović, G.K.; Mrakovčić-Šutić, I.; Udović, I.Š.; Majanović, S.K. The Influence of Energy-Restricted Anti-Inflammatory Diet on Innate Immune Response in Obese Patients. *Proceedings* **2022**, *69*, x. <https://doi.org/10.3390/xxxxx>

Academic Editor(s): Pedro Tauler

Published: date: 15 March 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Keywords: obesity; innate immunity; diet intervention; anti-inflammatory; Dietary Inflammatory Index