

Proceeding Paper

Greater Adherence to the Mediterranean Diet Pattern Is Related to a Better Inflammatory and Oxidative Status in Patients with Metabolic Syndrome [†]

Maria Magdalena Quetglas Llabrés ¹, Margalida Monserrat-Mesquida ^{1,2}, Cristina Bouzas ^{1,2}, Silvia Garcia ^{1,2}, Lucía Ugarriza ¹, Antoni Sureda ^{1,2} and Josep A. Tur ^{1,2,*}

¹ Research Group in Community Nutrition and Oxidative Stress, 07122 Palma de Mallorca and Health Research Institute of Balearic Islands (IdISBa), University of the Balearic Islands-IUNICS, 07120 Palma, Spain; m.quetglas@uib.es (M.M.Q.L.), margalida.monserrat@uib.es (M.M-M), cristina.bouzas@uib.es (C.B.), silvia.garcia@uib.es (S.G.), luciaugarriza@gmail.com (L.U.), antonio.sureda@uib.es (A.S.)

² CIBER Physiopathology of Obesity and Nutrition (CIBEROBN), Institute of Health Carlos III (ISCIII), 28029 Madrid, Spain

* Correspondence: pep.tur@uib.es

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Abstract: Metabolic Syndrome (MetS) is a clustering of obesity, hypertension, dyslipidemia and insulin resistance. This pathology is directly associated with increased risk of developing diabetes and cardiovascular diseases. MetS is also characterized by an increase of oxidative stress which contributes to impaired inflammation, vascular function, and atherosclerosis. Numerous studies establish that the best remedy to prevent the appearance and progression of this disease is the Mediterranean diet together with a healthy lifestyle. The aim of the present study was to evaluate the differences in biomarkers of oxidative stress and inflammation in 90 adults between 40–60 years old with MetS based on their adherence to Mediterranean Diet Pattern (MDP). Glucose, glycated haemoglobin A1c (HbA1c), and triglyceride levels were significantly higher in patients with lower adherence to MDP with respect to the group with greater adherence. Plasma levels of interleukin-1 β (IL-1 β), IL-6, IL-15, tumour necrosis factor α (TNF α), xanthine oxidase (XOD) and ghrelin and the activities of superoxide dismutase (SOD) and myeloperoxidase (MPO) were significantly higher in subjects with lower adherence to the MDP. ROS production in peripheral blood mononuclear cells (PBMCs) and neutrophils stimulated with lipopolysaccharide (LPS) was significantly greater in the participants with an adherence to the MDP under the median value. In conclusion, the present study evidenced that people who suffer from MetS, if they have a high adherence to the Mediterranean diet, present a lower degree of oxidative stress and an inflammatory state in relation to those with less adherence.

Keywords: Mediterranean diet; inflammatory mediators; oxidative stress; obesity; biomarkers

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