BENEFITS OF A MEDITERRANEAN-STYLE DIET ON INSULIN RESISTANCE, PLASMA LIPIDS, INFLAMMATION AND OXIDATIVE STRESS IN METABOLIC SYNDROME SUBJECTS

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Objectives: This study was undertaken to explore the effects of Mediterranean diet (MD) adoption on insulin resistance, oxidative and inflammatory status in metabolic syndrome (MS) patients. Subjects and methods: Eighty four patients with MS were randomly recruited in the medical centers of Oran. Eighteen healthy participants were selected as a control group. Among these 84 patients, only 36 patients have followed-up the nutritional advices for 3 months. Patients were instructed to follow a Mediterranean-style diet and received some other selected nutritional and physical activity instructions. Anthropometric measurements were performed and a questionnaire was used to assess dietary intake. Blood samples were drawn at baseline and after 3 months of nutritional intervention and in healthy subjects. Results: At baseline, the MS patients were obese and had altered anthropometric parameters, higher systolic and diastolic blood pressure, plasma lipids, glucose, insulin, HOMA-IR, HbA1C, urea, creatinine, uric acid and lower albumin compared to healthy subjects. A decrease in plasma and erythrocytes antioxidant enzymes and a rise in lipid and protein oxidation and plasma CRP and fibrinogen were noted in the MS patients. Moreover, they had an unbalanced dietary pattern when compared to Mediterranean recommendations. Patients following the Mediterranean-style diet had significantly reduced weight, BMI, waist circumference, waist/hip circumference ratio, decreased systolic and diastolic blood pressure, plasma glucose, insulin, HOMA-IR, HbA1C, cholesterol, triacylglycerols, CRP, urea, creatinine, creatinine clearance, lipid and protein oxidation and higher plasma and erythrocytes antioxidant enzymes. Conclusion: In conclusion, a lifestyle intervention based mainly on nutritional advices improves metabolic, oxidative and inflammatory abnormalities of metabolic syndrome.