

11th World Congress on Pediatric Cardiology and Congenital Cardiovascular Disease

April 18-19, 2017 London, UK

The impact of fasting and postprandial blood glucose increments on atherosclerosis via lipid composition and oxidative stress in patients with type 2 diabetes mellitus and coronary heart disease

Djindjic Boris, Sokolovic Dusan, Djindjic Natasa and Sokolovic Danko
University of Nis, Serbia

Objectives: Impact of fasting and postprandial blood glucose increments on atherosclerosis through changes of apolipoproteins and oxidative stress in patients with diabetes mellitus (T2DM) and Coronary Heart Disease (CHD) was evaluated.

Methodology: Ninety T2DM patients (60 with CHD and 30 without CHD) treated with metformin and/or sulphonylureas were enrolled in cross-sectional nested case-control clinical study. The areas under the six-point daily glucose curve above the fasting glucose concentrations (AUC_{pp}) and over 5.5 mmol/L (AUC_{bg}) were calculated to determine postprandial (AUC_{pp}) and fasting (AUC_{bg}-AUC_{pp}) glucose increments. Apolipoproteins AII and B (ApoAII and ApoB), serum lipids and malondialdehyde (MDA) were determined.

Results: AUC_{bg}-AUC_{pp} 58.2 (95% CI 40.6-75.8) was higher in CHD group compared to non-CHD 36.9 (95% CI 23.5-50.2) mmol*h/L. They had similar Apo AII (mean±SD) 1.630±0.69 vs. 1.55±0.55 mg/dl and Apo B 1.48±0.48 vs. 1.43±0.62 mg/dl (CHD vs. non-CHD). The MDA was significantly higher in CHD 16.47±4.5 compared to non-CHD patients 13.42±4.01 µmol/g plasma proteins. The values of PCO were similar in both groups as well as serum lipids (HDL, LDL, total cholesterol and triglycerides). AUC_{pp} positively correlates with MDA (r=0.45) and Apo B (r=0.49) in presence of CHD, AUC_{bg}-AUC_{pp} negatively correlate with Apo AII (r=-0.44) in absence of CHD. The analysis revealed that AUC_{pp} over turning point of 0 mmol*h/L was associated with high MDA and Apo B in CHD.

Conclusion: In T2DM patients with stable CHD, AUC_{pp} at any point significantly contributes to increasing of Apo B and MDA. Serum lipids did not show significant difference according to presence of CHD.

Biography

Djindjic Boris has completed his PhD from the University of Nis. He is an Associate Professor at the Institute of Pathophysiology, Medical Faculty, University of Nis and work as a Cardiologist at the Clinic of Cardiology, Clinical Center Nis. He has published more than 25 papers in reputed journals and has been serving as an Executive Editor of medical journal Acta Medica Mediana and Editorial Board Member of few national and international journals. He is the Leader of scientific subproject founded by Ministry of Science Republic of Serbia.

boris_dj@yahoo.com

Notes: