Resveratrol down-regulates Visfatin and improves hepatic dysfunction in streptozotocin-induced diabetes

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Visfatin is a recently discovered hormone known to be synthesized in adipocyte, hepatocyte and granulocytes and its production or suppression is modulated with diabetes mellitus. It has many cellular functions such as cell proliferation, biosynthesis of nicotinamide mono- and dinucleotide and possesses insulin-like hypoglycemic effect. This study aims to investigate the effects of diabetes on the hepatic visfatin, Asymmetric Dimethylarginine (ADMA), Erythropoietin (EPO) levels and histo-pathological features in streptozotocin-induced diabetes. In addition, the effects of resveratrol known as strong protective molecule were explored. Recruited Wistar male rats randomly divided into four groups; (1) control/vehicle; (2) control/20 mg/kg resveratrol; (3) diabetic/vehicle; (4) diabetic/20 mg/kg resveratrol. Hepatic visfatin, ADMA, EPO and insulin levels were measured with ELISA kits. Histo-pathological examinations were carried out to reveal hepatic tissue damage and inflammation. Body weight, hepatic insulin and ADMA levels reduced significantly but hepatic glucose, visfatin and EPO levels increased in the diabetic group. Furthermore, diabetes amplified damage, nuclear atypia and density of Kuppfer cells observed in the liver. Resveratrol treatment normalized these complications in the diabetic group. Oxidative damage triggered by diabetes enhanced ADMA levels but decreased visfatin and resveratrol improved this situation. This may be due to the protective activity of resveratrol on relationship between inflammation-visfatin pathways.

Biography

Mehmet Bilgehan Pektas has completed his PhD from Gazi University and Postdoctoral studies from Afyon Kocatepe University School of Medicine. He has published more than 7 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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