Abstract

Metabolic syndrome (MS) is a cluster of hypertension, insulin resistance, dyslipidaemia, and hyperuricemia. This study was designed to assess the effect of telmisartan and pioglitazone on high fructose induced MS. Thirty-five male albino rats were classified into 5 groups: A, normal diet; B, high-fructose diet (HFD) subdivided into B1 (HFD only), B2 (telmisartan, 5 mg/kg), B3 (pioglitazone, 10 mg/kg), and B4 (telmisartan + pioglitazone). Administration of the drugs was started after the rats had been on HFD for 4 weeks and continued for 4 weeks. Body mass (BM), blood pressure (BP), uric acid (UA), total cholesterol, triglycerides (TG), high-density lipoprotein (HDL-c), low-density lipoprotein (LDL-c), blood urea nitrogen (BUN), creatinine, and nitric oxide (NO) were measured and the levels of fasting glucose and fasting insulin were estimated. Compared with group B1, telmisartan treatment significantly decreased BP, BM, serum glucose, insulin, UA, urea, cholesterol, TGA, and LDL and significantly increased HDL, whereas pioglitazone treatment significantly decreased BP, serum glucose, insulin, UA, urea, creatinine, cholesterol, TGA, and LDL and significantly increased HDL. Co-administration of pioglitazone + telmisartan significantly decreased insulin, urea, and creatinine compared with telmisartan alone. Combined telmisartan + pioglitazone allowed better control of BP, hyperglycaemia, insulin resistance, and the amelioration of BM increase that may be associated with pioglitazone treatment.

Keywords: <u>metabolic</u> syndrome, telmisartan, pioglitazone, body mass, blood pressure, dyslipidaemia, uric acid, insulin resistance