

Evaluation of the relationship between Glutathione peroxidase activity (GPx) and total antioxidant capacity (TAC) serum level and complications of diabetes in patients referred to the endocrinology clinic of Semnan University of Medical Sciences in 1400

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Abstract

Background and Aim: Considering the hypothesis of the relationship between GPx and TAC and the pathogenesis of diabetes and its complications, as well as the novelty of research in this field and the need to increase awareness and information in this field, the present study aims to investigate the relationship between diabetes complications and The above mentioned two variables were designed and implemented.

Methods: The present study is a retrospective-descriptive study and was conducted in 1400 on patients referred to the endocrinology clinic of Semnan University of Medical Sciences with a sample size of 190 patients. Patients were examined to investigate chronic complications of diabetes (cardiopathy, neuropathy, retinopathy, and nephropathy). Cardiac complications by echocardiography by an experienced echocardiographer, neuropathy by neurological examination of the lower limbs and the use of monofilament with the diagnosis of a neurologist, retinopathy by an experienced ophthalmologist and nephropathy by BUN, Cr, UA and hourly urine protein tests It was checked. SPSS version 26 software was used for data analysis.

Results: More than half of the male patients (59.3 percent) and also more than half of them (53.5 percent) mentioned only taking oral medicine. 11.6% of patients did not have any complications related to diabetes. The most common complications observed were hypertension (70.9%), neuropathy (69.8%) and CAD (39.5%). The average age of the patients is 10.0 ± 56.1 years, the average GPx is 0.37 ± 0.40 , and the average TAC is 85.21 ± 203.24 . The average TAC in the group that did not receive insulin (79.7 ± 225.3) was significantly higher than the group that received insulin (85.9 ± 182.8) ($P=0.03$). No significant difference can be reported between the subgroups of other variables in terms of these two variables. The two variables GPx and TAC had no significant correlation with quantitative variables including age, fasting blood sugar, HbA1C and BMI ($P<0.05$). Based on univariate and multivariate regression analysis, GPx and TAC variables had no significant relationship with age, fasting blood sugar, HbA1C, BMI and diabetes complications ($P<0.05$ in all cases).