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Telomerase enzyme and glutathione peroxidase 1gene as a risk factor in diabetes mellitus type 1 patients in Babylon province

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Abstract : Type 1 diabetes mellitus is a chronic autoimmune condition. Telomerase is an enzyme that maintainstelomere length in nuclear DNA. The aim of the study is to investigate the relationship between telomerase and glutathione peroxidase 1 GTPX1 concentrationand GPX1 pro 198 Lus gene in diabetes mellitus type 1.This study include (108) persons, their ages between (28-42 years) and body mass index in normal and overweight (68) of them were uncontrolled diabetes type 1 (HbA1c ≥ 6.5), (34) of them are male (M)patients, the other (34) are female(F) patients, and the other (40) apparently healthy as control (C)group included the (20) male(MC) with (20) female(FC).

The present study,observed, a significantly increase in glucose, HbA1c and glutathionein patients when compared with control groups,while significant decrease in telomerase enzyme, TAO-C and GPX1.The results showed significant negative correlation between telomerase enzyme concentration and BMI in patients and control. Also, there is a significant differences in GPX1 levels of TT genotypes in patients compared to CT and CC genotypes, the frequency of TT genotypes in GPX1 gene in male and female were 47% and 61.7% compare to control male(0%) and female(10%) and the odd ratios were(33, CI95% 1.65-656.26) (12.6, CI 95% 1.93-82.08), respectively. there is significant different in glutathione peroxidase and in telomerase concentration depending on different genotyping of GPX1 gene. Conclusion:The TT genotype of the GPX1 gene variation pro 198 Luswas a risk factor to T1DM patients. TIDM is associated with glutathione peroxidase and telomerase concentration in subjects with TT genotypes of GPX1 gene compared to those with CT and CC genotypes.

Key words : telomerase, glutathione peroxidase, type 1 DM, genotypes.

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