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THE ROLE OF ISLET CELL AUTOANTIBODIES, ISLET CELL ANTIGEN-2 ANTIBODY AND ANTIOXIDANT ENZYMES IN DIABETIC PATIENTS TYPE 2

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ABSTRACT

This study included 120 individuals, 60 type 2 diabetic patients and 60 control individuals who had no family history of diabetes mellitus (DM)

Laboratory investigations were done to estimate glutamic acide decarboxilase (GAD) and islet cell antigen-2 (IA-2) autoantibodies by ELISA assay, antioxidant enzymes as glutathion peroxidase (GPX) and superoxide dismutase (SOD) and HbA1c as marker of glycemic control for these patients and control group.

During the period from December 2010 to the end of December 2012. This study enrolled diabetic patients who attended Al-Tahreer General Hospital, Al-Basra Maternity and Pediatric Hospital and Al-Sader Teaching Hospital.

Regarding type 2, it is noticed that 15 (25 %) and 8 (15 %) of those patients were positive for GADA and IA-2A respectively (LADA patients) characterized by certain clinical features that differentiate them from islet cell autoantibodies negatives type 2 diabetics as it was found that the majority of patients with islet cell positivity develop the disease at younger age than those negative patients (57.1% Vs7.7) regarding GADA &(33.3% Vs 2.6%) regarding IA-2A.

Additionally, islet cell autoantibodies positive patients were significantly of higher HbA1c levels than those who were islet cell autoantibodies negative patients (P, 0.001). The difficulty in achieving glycemic control despite OHD and tendency to insulin therapy is attributed to the fact that pathogenesis of diabetes in LADA patients are due to beta cell destruction rather than insulin resistance as in classical type 2 DM.

In addition to that patients of type 2 were significantly lower than control (P < 0.001) in mean activity of both antioxidant enzymes (SOD and GPX) in RBC.

Also lower mean activity of both antioxidant enzymes (SOD and GPX) in RBC were showed higher significant in patients who had uncontrolled diabetes (HbA1c level > 8%) group (P < 0.001).

Regarding LADA group who those showed positive result to GAD and IA-2 autoantibodies showed that significant decrease in mean activity of SOD and GPX in comparison to those negative to autoantibodies of type 2 diabetic patients and also most of them (LADA) had higher HbA1c level > 8%, P< 0.01.

There were significant correlations between the GPX and SOD enzymes with duration of disease and level of HbA_{1c} of type 2 diabetics patients P < 0.01, but there was no significant correlations between the enzymes with Age, P > 0.05.

KEYWORDS: Glutamic Acid Decarboxylase, Glutathione Peroxidase, Islet Cell Antigen-2, Superoxide Dismutase, Type 2 Diabetes

Original Article

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