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## ASSOCIATION OF OSTEOCALCIN WITH SOME ANTIOXIDANT PARAMETERS IN DIABETES MELLITUS IN IRAQ

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Osteocalcin, control the regulation of blood sugar and fat deposition through synergistic mechanisms, so osteocalcin directs the pancreas' beta cells to produce more insulin, at the same time, osteocalcin directs fat cells to release adiponectin, which improves insulin sensitivity.

**Aims of the research:** There was a suggestion to the research that estimates the concentration of osteocalcin and some antioxidant parameters in control and diabetic patients (Type I and Type II) and the coefficients between them.

**Materials & Methods:** This study included (70) healthy subjects (35 female, 35 male). Also, (75) patients (37 female, 38 male) with diabetes mellitus from al-waffa center for diabetic patients in Mosul city in Iraq, their ages ranging between ( $\leq 15 - \geq 65$ ) years old.

**Results:** The results demonstrated a significant decrease in the concentration of osteocalcin in serum of type I and type II diabetic patients compared with control and between type I diabetic patients compared with type II. The results also showed a significant increase of adiponectin concentration between type I diabetic patient compared with type II and control, while found a significant decrease in the concentration of thioredoxin in serum of diabetic patients (type I) compared with control and diabetic patients (type II), also a significant increase in the concentration of malondialdehyde (MDA), total lipids, total cholesterol, triglyceride, Very low density lipoprotein-cholesterol (VLDL-C) and Low density lipoprotein-cholesterol (LDL-C) in serum of diabetic patients (type I and II), and a significant decrease in the concentration of glutathione (GSH), High density lipoprotein-cholesterol (HDL-C), magnesium, and zinc in serum of diabetic patients (type I and II) compared with control. Correlation coefficients between osteocalcin and some antioxidant parameters of control and diabetic patients showed that osteocalcin concentration has a significant negative correlation with concentration of total cholesterol, triglycerides, VLDL and LDL-C. While a significant positive correlation with concentration of thioredoxin, GSH, HDL, and zinc in control and diabetic patients (type I and II). Also osteocalcin has a significant negative correlation with concentration of MDA and has a significant positive correlation with concentration of adiponectin in control and type II diabetic patients.

**Conclusion:** these results provide evidence of a major role for osteocalcin in diabetes mellitus. Also there are correlations between osteocalcin and Some Antioxidant parameters.

### Biography

Thikra A Allwsh has completed her PhD from Mosul University. She has published more than 30 papers in reputed journals and has been serving as an Editorial Board Member of repute. She is serving as Professor at University of Mosul in the field of biochemistry. She is the head of the of Biochemistry and then supervised many Doctoral and Master's studies. She participated in the discussion of a large number of students of Master's and Doctorate and also participated in many conferences and seminars in the field of biochemistry as well as supervision of the projects of undergraduate students.

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