

## **Abstract**

**Introduction:** Recent studies have reported that the activity of paraoxonase 1 decreases due to diabetes, but the change in the level of activity of paraoxonase 1 is known as one of the underlying factors of Alzheimer's disease.

**Objective:** The aim of this study was to investigate the relationship between diabetic cognitive impairment and serum paraoxonase 1 activity in patients with diabetes.

**Method:** In this cross-sectional study, 127 patients with diabetes whose disease was diagnosed by measuring fasting blood glucose and insulin were present and glucose level (FBS) and insulin (Fins), fasting blood, body mass index (BMI), Cognitive impairment and level of intelligence, and serum activity of paraoxonase 1 were calculated by Beltowski method. Data were analyzed by independent group t-tests, simple linear regression, Pearson correlation and ANOVA analysis of variance with SPSS25 software.

**Results:** The results showed that the level of glucose and insulin in the blood and the activity of paraoxonase 1 in these patients had no significant relationship with their intelligence level ( $P < 0.05$ ). Also, fasting blood glucose and insulin levels and paraoxonase 1 activity were not significantly associated with cognitive impairment ( $P < 0.05$ ).

**Conclusion:** The results showed no correlation between diabetic cognitive impairment and serum paraoxonase 1 activity in patients with diabetes in Ardabil. It seems that determining the relationship between these variables requires further research.

**Keywords:** Cognitive impairment, Alzheimer's, Paraoxonase 1, Diabetes.