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Correlation of Hepatic Transaminases with Cortisol levels in Type 2 Diabetes.

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Abstract

Background: Aminotransferases are the markers of liver function and cortisol is the hyperglycemic stress hormone, both have been associated with insulin resistance and type 2 diabetes. **Objectives:** This study aimed to evaluate the correlation of cortisol with hepatic transaminases; AST and ALT also with fasting blood glucose (FBG) and HbA1c in type 2 diabetic patients. Also, the AST, ALT and cortisol levels of participants were compared based on their diabetic duration and gender. **Methods:** This prospective study included patients with type 2 diabetes (n=89) with a mean diabetic duration of 7.66 ± 6.871 years, of which 66.3% were males and 33.7% were females. Data for the above parameters except cortisol were collected from the data management system of the central lab. Morning serum cortisol levels were estimated by enzyme-linked immunosorbent assay (ELISA) method. Karl Pearson's correlation coefficient and independent student's t-test were applied to find correlation and comparison of AST, ALT and cortisol levels of participants based on their diabetic duration and gender respectively. **Results:** The comparison based on diabetic duration shows significant differences ($p < 0.005$) with AST while, not with ALT and cortisol. Also, they did not show a significant difference in either of the gender. Among hepatic transaminases, the probability of association of ALT with FBS levels and HbA1c levels was significant ($p < 0.05$). However, though a positive trend is seen in the AST association, there is no strong correlation observed. Likewise, the association of serum cortisol levels, with AST, ALT and HbA1c was not significant but the probability of association was significant with FBS levels. **Conclusion:** Findings from the present study suggest that liver transaminases are positively correlated with serum cortisol levels in type 2 diabetic patients.

Keywords:

Type 2 diabetes mellitus, hepatic transaminases, aspartate aminotransferase, alanine amino transferase, NAFLD, cortisol, subclinical hypercortisolism.