

PROGNOSTIC VALUE OF SERUM ADIPONECTIN LEVEL IN DIABETIC PATIENTS WITH AND WITHOUT HELICOBACTER PYLORI INFECTION

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INTRODUCTION

Adipose tissue is a critical endocrine organ that secretes various adipocytokines, with adiponectin being the most abundant and essential for metabolic regulation. This hormone has anti-inflammatory and insulin-sensitizing effects, and its levels are inversely correlated with obesity and insulin resistance, positioning it as a potential prognostic marker for diabetes severity. Research suggests that Helicobacter pylori infection is linked to reduced adiponectin levels in diabetic patients, potentially worsening insulin resistance and increasing the risk of complications. Thus, monitoring serum adiponectin could help identify diabetic individuals at heightened risk for severe outcomes associated with HP co-infection.

AIM OF THE WORK

The aim of this study was to evaluate the association between serum adiponectin level and HP infection in diabetic patients with and without insulin resistance.

SUBJECTS AND METHODS

This study involved 100 participants divided into three groups: 40 diabetic patients with positive Helicobacter pylori (HP) infection, 30 diabetic patients without HP infection, and 30 matched healthy controls. Exclusion criteria included diabetic patients receiving insulin, those who smoked or were pregnant, and individuals with a history of HP treatment. Ethical considerations were made, ensuring data privacy and obtaining informed consent from all participants. Each participant underwent detailed clinical evaluations and laboratory investigations, which included blood tests for liver and renal function, inflammatory markers, and serum adiponectin levels, as well as assessments for HP infection and insulin resistance.

RESULTS

The results revealed significant differences in serum adiponectin levels among the three groups. Diabetic patients with positive HP infection (Group I) had a mean adiponectin level of 5.2 ng/mL, which was significantly lower than the 10.4 ng/mL observed in diabetic patients without HP infection (Group II) and the 12.1 ng/mL in healthy controls (Group III). Additionally, a notable correlation was found between insulin resistance markers, such as HOMA-IR, and lower adiponectin levels in diabetic patients, with a correlation coefficient of -0.45 ($p < 0.01$). These findings highlighted the adverse impact of HP infection on adiponectin levels and metabolic regulation in diabetic patients.

Table: Comparison between the three studied groups according to adiponectin

	Group I (n = 40)	Group II (n = 30)	Group III (n = 30)	H	p
Adiponectin					
Min. – Max.	2.20 – 11.80	4.00 – 21.50	5.00 – 89.60		
Median (IQR)	5.65 (3.70 – 8.65)	6.95 (5.20 – 10.50)	8.70 (7.30 – 16.50)	20.332*	<0.001*
Sig. bet. grps.	$p_1=0.040^*$, $p_2<0.001^*$, $p_3=0.022^*$				

IQR: **Inter quartile range**

SD: **Standard deviation**

H: H for **Kruskal Wallis test**, Pairwise comparison bet. each 2 groups was done using **Post Hoc Test (Dunn's for multiple comparisons test)**

p: p value for comparing between the three studied groups

p_1 : p value for comparing between **group I** and **group II**

p_2 : p value for comparing between **group I** and **group III**

p_3 : p value for comparing between **group II** and **group III**

*: Statistically significant at $p \leq 0.05$

Group I: With positive HP by stool Ag test

Group II: Without HP infection

Group III: Healthy controls of matched

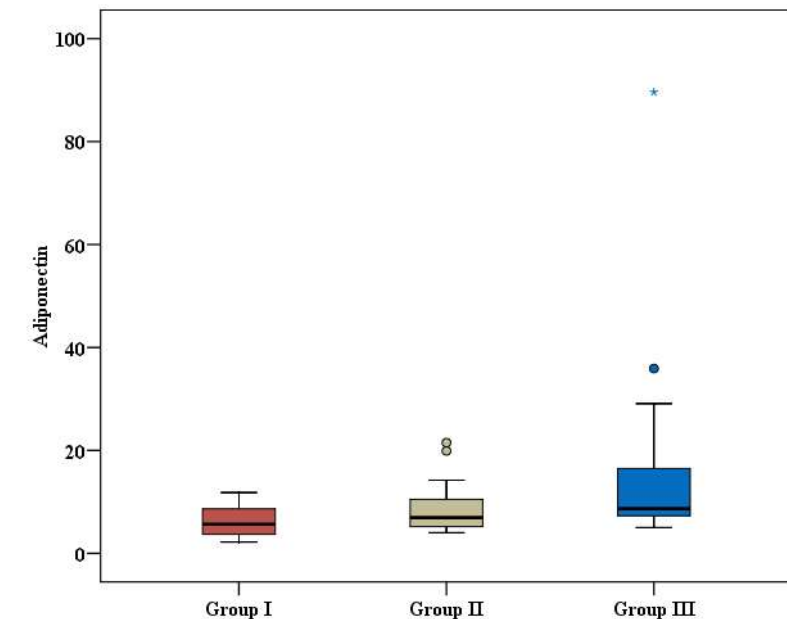


Figure: Comparison between the three studied groups according to adiponectin

CONCLUSION

This study found a significant link between Helicobacter pylori infection and adverse metabolic parameters in diabetic patients, including lower serum adiponectin levels, increased insulin resistance, and higher prevalence of anemia.