Glycated Hemoglobin, Gastric Juice Nitric Oxide and Oxidative Stress in Diabetic Patients Infected by Helicobacter Pylori

Abstract

Background and Objective: Recently, diabetes mellitus has been known as one of the main cause of upper gastrointestinal symptoms. Since a high prevalence of H. Pylori in diabetic patients has been reported, we aimed to evaluate the level of gastric juice Nitric Oxide (NO), Oxidative Stress and Glycated Hemoglobin.

Material and Methods: In case group, the participants were 60 diabetic patients infected with H. Pylori, and in control groups 60 diabetic patients without H. Pylori and 60 healthy individuals. The level of NO in gastric juice was measured calorimetrically and the activity of superoxide dismutase (SOD) and glutathione peroxidase (GPX) in gastric biopsy was determined using standard methods. The percentage of Glycated Hemoglobin (HbA1C) was measured by ion exchange chromatography.

Results: In case group compared to controls, significantly increased level of blood HbA1C, nitric oxide in gastric juice, activity of SOD and GPX in the gastric mucosa were observed (p<0.0001).

Conclusion: A significant increase of glycated hemoglobin in diabetic patients with H. Pylori and high activity of antioxidant enzymes in the case group may indicate a high production of reactive oxygen species and the presence of oxidative stress in these patients.

Key Words: Diabetes Mellitus, H. Pylori Infection, Glycated Hb, Nitric Oxide, Oxidative Stress