Evaluation the Effect of Oral Administer PUFAs on Apoptosis in Gastric Mucosa in Patients Infected with *Helicobacter Pylori*

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Abstract

Introduction and Objective: *Helicobacter Pylori* infection makes a high percentage of stomach tissue infection, and is one of the major causes of oxidative stress, peptic ulcers and other gastrointestinal disorders. Some studies have investigated the effects of dietary regimes such as fatty acids on preventing cancers , and unsaturated necessary fatty acids and Arachidonic acid influence many physiological processes such as immune response and apoptosis. In this study, the effect of oral administration of omega-٣ fatty acids, Omega-٦ and Omega-٩ on the process of apoptosis have been investigated in *H. Pylori* infected patients.

Materials and Method: This study was a clinical trial, and selected patients underwent endoscopy and with the help of Rapid Urease Test and pathological checking's *H. Pylori* was detected. Then, ٣٤ patients were divided into ٢ groups of ١٧. All patients were homogenized for age, sex and nutritional requirements. In the first group, treatment was performed by routine antibiotics without supplementation and the second group treatment was performed with the same antibiotics with omega ٣, ٦ and ٩ fatty acids pills for ٢ consecutive weeks. After this period, again endoscopy was done on these patients with biopsies taken from the fasting stomach, and *H. Pylori* eradication and elimination of chronic active gastritis was followed. The amount of semi-quantitative Bcl٢ proteins and caspase-٣ enzyme by Frozen Section method and immunohistochemistry before and after the treatment were measured and their genetic expressions were analyzed using Real-Time PCR.

Results: Caspase-٣ protein enzyme in mucosal gastric tissue after ٢ weeks of drug therapy in both groups increased , but this increasing was much higher in the second group , and statistically it was significant (p= ٠.٠٠٤٧). Bcl-٢ protein in gastric tissue after ٢ weeks of drug

therapy decreased in both groups , and this decreasing was significant in the second group (p=۰.۰۱۵). To confirm this increasing and decreasing in the next stage, the extraction and quantification of the enzyme caspase-۳ gene and Bcl-۲ protein was performed. The results confirmed this increasing.

Conclusion: According to the results of this study and various previous studies, it seems that the effect of oral administration of omega ۳, ۶ and ۹ fatty acids with commonly used antibiotics can be useful for the eradication of Helicobacter pylori and apoptosis stimulation of gastric epithelial cells.

Key words: *Helicobacter Pylori* Infection, drug resistance, PUFAs, Apoptosis, Bcl-۲ protein, Caspase-۳