Effect of *Lactobacillus reuteri* on the Eradication of *Helicobacter Pylori* Infection

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ABSTRACT

Introduction: *Helicobacter pylori* is a Gram-negative bacterium that causes gastritis, gastric ulcers, and long-term gastrointestinal complications by producing various enzymes in the stomach. The high probability of treatment failure, caused by the rise of resistant strains and patients' intolerance to drug side effects, has prompted to explore various strategies to enhance the effectiveness of treatment for eradication. This study aimed to evaluate the effect of adding *Lactobacillus ruteri* to the four-drug regimen of *H. pylori*.

Methods and Materials: This clinical trial study was performed on 76 patients with *H. pylori* infection who did not suffer from malignant or chorionic diseases or allergies to the drugs used. A simple random sampling method was used. Thirty-eight patients received probiotics, and 38 patients were in a control group with a four-drug regimen of 20 mg of omeprazole, 1000 mg of amoxicillin, 500 mg of metronidazole, and 240 mg of bismuth, all administered twice daily. The patients were followed up for two weeks at the hospitals affiliated with the Islamic Azad University of Mashhad in 2019-2020. *H. pylori* antigen in feces after intervention and drug side effects were assessed in all patients. Appropriate statistical tests such as variance analysis and covariance analysis were used. The data were finally analyzed using SPSS 25 software.

Results: A total of 76 patients were studied, including 46 women with a mean age of 32.30 ± 3.48 years. In the control group, there were 54 women with a mean age of 48.47 ± 13.99 years. The eradication rate of *H. pylori* was not significantly different between the two groups. However, the level of complications of bloating and nausea in the probiotic group was significantly lower in the case than the control group. In other complications, this rate was lower in the probiotic group but was insignificant ($p > 0.05$).

Conclusion and Discussion: Our findings reveled that using probiotics for *H. pylori* can significantly help to reduce complications during treatment; therefore, its use is recommended along with three-drug and four-drug treatments.

Keywords: Gastritis, *Lactobacillus reuteri*, *Helicobacter pylori*

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