The Role of Probiotics as an Adjuvant to Sequential H. Pylori Eradication Therapy

Helicobacter pylori is a common bacterium that colonizes the gastric mucosa and infects 70%–90% of the population in developing countries [(1)]. The tendencies of decline in eradication rates have been reported in recent studies because of increased antibiotic resistance as well as increased incidence of undesirable side effects of longer term treatment ،which can lead to patient non-compliance [(2, 3, 4, 5, 6, 7, and 8)]. Owing to the growing need for newer alternative eradication regimens or adjuvant treatments, the addition of probiotics (administration of live microbial species) has been considered likely to offer beneficial health effects [(9)] and thus has attracted substantial interest with respect to H. pylori eradication therapy [(10-13).]

A clinical research study published in 2017 aimed to evaluate the effect of probiotics administered as an adjuvant to sequential H. pylori eradication therapy on eradication rates, treatment resistance, treatment-related side effects, and patient compliance. In this study, a total of 159 patients diagnosed with H. pylori via endoscopic gastric biopsies, were eligible to be included in this randomized placebo-controlled study. Patients who had previous H. pylori eradication therapy, gastric cancer, and known allergic reactions to penicillin therapy were excluded. All patients received 2-week sequential H. pylori eradication therapy (ERA) with amoxicillin 1000 mg bid + Pantoprazol 40 mg bid in the first week and then metronidazole 500 mg tid + clarithromycin 500 mg bid + PPI Pantoprazol 40 mg bid in the second week. Starting from day 0 of 2 weeks sequential eradication therapy (ERA), patient in the ERA + probiotic group (n=53), received a probiotic supplement with Maflor (7×109 CFU B. animalis subsp. lactis B94; 1 capsule/day), patients in the ERA + placebo group (n=52), received placebo treatment (1capsule/day), and patients in the ERA-only group (n=54), received no additional treatments. The participants were randomly assigned in a 1:1:1 allocation to the ERA + probiotic, ERA + placebo, or ERA only groups, using a computer-generated permuted block randomization with a block size of six [(14)].

As a result, this study points out that higher eradication rate was seen in ERA + probiotic group compared to the combined “ERA only and ERA + placebo” groups (p=0.025) and no difference for treatment resistance related to antibiotics (p=0.389) and non-compliance (p=0.060) in the ERA + probiotic group compared with the combined ERA. The first week diarrhea related non-compliance (amoxicillin-related diarrhea), the percentage of patients from the ERA + probiotic group was significantly lower as compared with patients from the combined ERA group (p=0.036). In term of symptom prevalence, in the first week of anti-H. Pylori treatment, patients in the ERA + probiotic group expressed significantly lower rates for loss of appetite (p=0.044) and diarrhea (p=0.01), compared to patients in the ERA-only and ERA + placebo groups. In the second week, loss of appetite (p=0.009), dizziness (p=0.034), abdominal pain (p<0.001), diarrhea (p=0.009), and headache (p=0.003) were significantly less common in the ERA + probiotic group than in the ERA-only and ERA + placebo groups [(14)].

In conclusion, adjuvant administration of probiotic (B. animalis subsp. lactis) in 2-week sequential H.pylori eradication therapy is associated with a higher H. pylori eradication rate, lower first week diarrhea-related treatment discontinuation rates, less common self-reported side effects, and higher treatment compliance. The use of adjuvant probiotic treatment appears promising in enabling gastric H. pylori eradication and ameliorating most treatment-related adverse events.

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