

## Different treatment choice for first-line treatment of *Helicobacter pylori* in an area with a high antibiotic resistance

To the Editor,

The prevalence of *Helicobacter pylori* (Hp) reaches nearly 90% in developing countries. Hp leads to varying degrees of chronic gastritis in all infected individuals (1). The success of standard triple-therapy regimen has dropped below 80% in the eradication of Hp infection (2). Therefore, eradication studies are needed with different treatment protocols and different durations of treatment.

We included 90 Hp-infected patients diagnosed histologically. The patients with chronic disease who previously received Hp eradication therapy and underwent gastric surgery were excluded. Patients were randomly divided into 2 groups. The therapy protocol, containing rabeprazole 2x20 mg (Bilim, Kocaeli, Turkey), amoxicillin 2x1 g (Glaxo Smith Kline, İstanbul, Turkey), metronidazole 3x500 mg (I.E. Ulagay, İstanbul, Turkey), and bismuth 2x300 mg (Astellas Pharma Europe B.V., İstanbul, Turkey), was given to the first study group for a period of 1 week and the second study group for a period of 2 weeks. At least 1.5 months after the end of therapy, participants provided a urea breath test (UBT). (Heliprobe analyzer, Wedholm Medical, Kibion, Sweden).

A total of 47 patients for the first group and 43 patients for the second group were recruited. There were no statistically significant differences between the groups in terms of age and gender. While the total eradication rate was 80%, the eradication rate of the first group was 74.4%, and the eradication rate of the second group was 86%. We observed an increase of 11.6% in the success rate of the 2-week eradication therapy, with a statistically non-significant difference (Table 1).

Eradication of Hp, due to increasing antibiotic resistance, is becoming increasingly difficult. The Maastricht

**Table 1.** Comparison of 1- and 2-week treatment protocols

	1 week	2 weeks	p
n	47	43	NS
Female/Male	17/30	15/28	NS
Age ( year)	44.6±9.9	40.3±13.1	NS
Eradication Rate (%)	74.4%	86%	NS

n: number of patients; NS: statically non-significant

4 criteria recommend bismuth-containing quadruple therapy (Bismuth, tetracycline, metronidazole, Proton pump inhibitor (PPI)) as a first-line treatment for countries with above 20% clarithromycin resistance (2). The use of tetracycline 4 times a day and esophagitis are side effects of tetracycline and may cause difficulties in terms of patient compliance.

Cytochrome P450 polymorphism leads to metabolism of PPIs at different rates and therefore affects the success of Hp eradication. It has been reported that the inhibitory potency of rabeprazole on the P450 system is relatively lower than the other PPIs (3). Therefore, in this study, we preferred rabeprazole as the PPI.

In the literature, studies have shown that the eradication rate of a protocol including amoxicillin, metronidazole, and PPI is reported to be around 90% (4). Bismuth exerts a direct bactericidal effect on Hp, and no resistance to bismuth has been reported (5). We also used bismuth in our study protocols.

Duration of Hp eradication therapy is still controversial. In our study, although Hp eradication rates provided by the 1- or 2-week treatment protocol were not significantly different, there was an 11.6% increase in eradication rates. An increase of 11.6% can not be ignored.

This case was presented at the 10<sup>th</sup> National Hepato Gastroenterology Congress, TRNC, September 25-29, 2013

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**Received:** September 02, 2013 **Accepted:** November 24, 2013

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As a result, the 2-week treatment protocol containing PPI, amoxicillin, bismuth, and metronidazole should be considered as first-line treatment in areas with a high prevalence of background antibiotic resistance.

**Ethics Committee Approval:** N/A.

**Informed Consent:** Written informed consent was obtained from patients who participated in this case.

**Peer-review:** Externally peer-reviewed.

**Author contributions:** Concept - Y.N.; Design - Y.N.; Supervision - Y.N.; Data Collection&/or Processing - A.Ö.Y., A.K., B.A., M.U., S.B.; Analysis&/or Interpretation - A.K., S.B.; Literature Review - S.B.; Writing - S.B.; Critical Reviews - Y.N.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study has received no financial support.

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