

**Determination of Antibiotic Resistance and Synergistic Effect of Multiple Antibiotics on
Helicobacter Pylori Isolated from the Stomach Ulcer Biopsy Specimens**

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Abstract

Background and Objective: Resistance of *Helicobacter Pylori* (*H. pylori*) to antibiotics is the main cause of relapse into Helcobacterial infections. With the use of several antibiotics that have synergistic effect, we can inhibit this antibiotic resistance. Thus, we aimed at determining resistance patterns and assessing the synergy of combining multiple antibiotics on *H. pylori*.

Material and Methods: Biopsy specimens were taken from 100 patients with gastric ulcer referred to Imam Reza hospital in Amol, north of Iran. After isolation and identification of *H. Pylori*, antibiogram was performed with different antibiotic disks containing one antibiotic, a combination of two antibiotics (metronidazole + clarithromycin) and three antibiotics (metronidazole + Claritromycin + Ciprofloxacin).

Results: In this study, *H. pylori* were isolated from 53 (53%) biopsy specimens. Of these, 49 (5.92%) were resistant to metronidazole, 14 (26%) to amoxicillin, 10 (19%) to clarithromycin, 7 (13%) to tetracycline, 13 (5/24%) to furazolidone and 7 (13%) to ciprofloxacin. In survey of synergistic effect, an increase in inhibition zone diameter around of combined disks was seen up to 5mm compared to the most effective antibiotic.

Conclusion: The inhibition zone diameter of discs containing two and three antibiotics was large, in comparison with one antibiotic.

Key words: *H. Pylori*; Antibiotic Resistance; Synergy Effect