

## Investigation of Mixed-infection of *Helicobacter pylori* in Different Patients by RAPD Typing Methods

Tannaz Malekian; Shima Dorafshan; Farzam Vaziri; Tabassom Mirzaei; Leila Shokrzadeh\*; Masoud Alebouyeh; Mohammad Reza Zali

Research Center for Gastroenterology and Liver Disease, Shahid Beheshti University of Medical Science, Tehran, Iran

tannaz.malekian@gmail.com

**Background & Objectives:** Mixed-infection of *Helicobacter pylori* can often hinder the procedure of remedy. Spontaneous mutation and recombination during long-term chronic infections or co-infection with different strains accounts for mixed-infection with *H. pylori*. An efficient antibiotic treatment follows diagnosis of mixed-infection patients. Therefore, the aim of this study was to evaluate genetic diversity of *H. pylori* isolates among the infected patients.

**Methods:** Biopsies were taken from antrum of 32 patients. After homogenization, the biopsies were cultured on supplemented Brucella Agar with 7% sheep blood and antibiotics in 37°C, at microaerophilic conditions for 3-10 days. After biochemical and molecular identification (16s rRNA and glm), 5-6 single colonies were arbitrarily selected from each patient. Pure cultures of single colonies were used for DNA extraction. PCR-based RAPD typing was carried out with random primers 1283 and 1254. Similarity of all RAPD banding profiles was analyzed by GelCompar Software.

**Results:** Analysis of RAPD patterns of the 160 *H. pylori* isolates with different gastric symptoms showed >32 different RAPD types. Comparison of the banding profiles from each patient demonstrated common diversities in 1-4 bands. Based on this observation, 31.25% of the isolates were considered as identical, 31.25% as related, and 37.5% as unrelated. Analysis of the PCR-based RAPD typing results showed mixed-infection in 68.75% of the cases.

**Conclusion:** Results obtained from this study showed *H. pylori* strain variation among the studied patients. Comparison of the banding patterns from each patient pointed out dominance of a single RAPD type that can offer a common ancestor for them. Referring to the presence of the isolates with more related and identical RAPD types among Iranian patients, it seems possible that they were infected with variants of one strain during their life times. Mixed-infection in these patients should be considered clinically, which can cause treatment failure.

**Keywords:** Mixed-Infection; *Helicobacter pylori*; RAPD Typing