Distribution of clarithromycin resistant strains of Helicobacter pylori in north-west Russia

2008
Abstract N. 1292
Tarasova E.
Osipov K.
Suvorova M.

Institute for experimental medicine Saint-Petersburg, Russia. Diagnostic laboratory “Diagnostika” Saint-Petersburg, Russia.

Objectives
Recent studies have shown that susceptibility of Helicobacter pylori strains to clarithromycin strongly depends on mutations in the gene of 23SrRNA. The level of clarithromycin resistance is constantly increasing in the population due to accumulation of specific mutations in the epidemic H. pylori strains. In this study we tried to assess the distribution of clarithromycin resistant strains of Helicobacter pylori in north-west Russia.

Materials and Methods
65 patients with H. pylori infection were included in the study. 51 of them were children under 16 years old. Helicobacter pylori infection was analyzed by histology, rapid urease tests and PCR employing the primers to urease C gene. From some of the patients both antral and body of stomach biopsies were examined. Clarithromycin resistance was assessed by polymerase chain reaction to identify the presence of point mutations in the peptidyltransferase region of the 23S rRNA gene previously associated with resistance to clarithromycin. PCR products were digested with restriction enzymes MboII, HhaI, and BsaI to detect mutations A2142G, T2717C and A2143G.

Results
Results Primary clarithromycin resistance was detected in 13 (20%) patients. The A2143G point mutation was detected in 6 (46.1%) patients, A2142G in 3 (23.%), A2117C in 4 (30%). 12 patients had the same mutations in antral and body stomach sections, but 1 patient had a strain of H. pylori without any mutations in antral section and A2142G mutation in body of stomach.

Conclusion
Our study found that clarithromycin resistance is highly prevalent and that A2143G is the most frequent point mutation involved in north-west Russia region. It is worth examining both antral and body sections of the stomach. These results suggest that the PCR is a valid tool for rapid assessment of clarithromycin resistance in H. pylori and that in the future it could be used directly on biopsy specimens, avoiding the need for culture-based methods.