Virulence determinants and antibiotic resistance of *Helicobacter pylori* isolated in pluritreated patients in a department of infectious diseases in Rome

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Seventy-six pluritreated patients were examined. 56% of them yielded *H. pylori*; of these, 9 patients showed a concomitant colonization of the three gastric regions.

The highest resistance rate was found for Metronidazole (71.8%) followed by Claritromycin (53.1%) whereas Amoxicillin showed the best susceptibility (only 6% of resistance). Levofloxacin appeared to be a promising antibacterial agent. The E-test method resulted to be more suitable than disk diffusion technique for resistance testing. Combined resistance to both Claritromycin and Metronidazole appeared in 50% of the strains. The isolates showing this dual resistance are recognized difficult to eradicate.

Resistotypes resulted to be genotypically different even if the strains with the resistance to both Claritromycin and Metronidazole are more likely to belong to genotype cagA+ and vacA s1m1. Heteroresistance (different susceptibility of the isolated strains in a single stomach) resulted in 36% of patients with pangastritis. Indeed, the concomitant presence of *H. pylori* strains in the same subject, either susceptible or resistant or vice versa, may interfere with the eradication outcomes. In our study, antibiotic resistant *Hp* typically develops from pre-existing susceptible strains rather than from co-infection with different and unrelated strains. In fact, each pair of isolates detected in four patients with heteroresistance, belonged to the same genotype (cagA+ s1m2 in patient 1 and cagA+ s1m1 in patients 2, 3 and 4).

In conclusion, *H. pylori* antibiotic resistance state does present several issues in pluritreated patients owing to the rapid emergence of multi-resistant strains.

Biography

Maria Teresa Mascellino has completed her MD at the age of 25 years from University “La Sapienza” of Rome and specialization studies in Clinical Microbiology and Infectious Diseases from University “La Sapienza” of Rome. She is the Director of Microbiology Laboratory in the Department of Infectious Diseases. She has published more than 80 papers in reputed journals and has been serving as an editorial board member of repute. She is member of many scientific societies and has participated in relevant International Research Projects.

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