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The use of different laboratory methods in diagnosis of *Helicobacter pylori* infection; a comparative study

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Abstract

Background: *Helicobacter pylori* are well recognized as a major cause of gastrointestinal illnesses and gastric cancers. Therefore, the current study aimed to assess different methods for detection of *H. pylori* in the oral cavity (saliva and dental plaque) and in gastric biopsy among patients with gastric affection, as well as, detection of *H. pylori* antigen in stool, moreover, to evaluate the antibiotic susceptibility testing of the isolated strains.

Methods: Specimens were obtained from Endoscopy Unit, Internal Medicine Department, Faculty of Medicine, Beni Suef University Hospital, Egypt. Thirty patients were subjected to detailed history and different sampling; gastric biopsy, oral and stool samples. The oral and gastric samples were processed and cultured. Thereafter, microscopic examination and rapid urease tests (RUTs) were conducted. *H. pylori* antigen detection was carried out in the stool samples, as well as, susceptibility testing to several antibiotics for all isolates identified.

Results: The selected patients had a mean age of 36.23 + 6.317 years. They included 17 males (56.7%) and 13 females (43.3%). 90% of the cases were found positive by culture of the gastric biopsies, while, 96.7% were positive in oral cultures. 92.5% of the gastric samples showed positive results by microscopic examination, however, RUTs were positive in 63.3% of the gastric samples and in 73.3% of the oral samples, meanwhile, 66.7% of patients were found positive by testing their stool for *H. pylori* antigens. The prevalence of resistance among gastric and oral isolates to Amoxycillin, Amoxycillin/Clavulinic acid, Ampicillin/Sulbactam, Clarithromycin , Tetracycillin and Metronidazole were; (3.7 and 17.2 %), (11.1 and 24.1 %), (11.1 and 20.7 %), (11.1 and 24.1 %), (25.9 and 37.9 %) and (96.3 and 100 %) respectively.

Conclusion: There is an evidenced association between gastric affection and oral *H. pylori* recognition that, even exceeds stool detection of *H. pylori* antigen. Moreover, continuous evaluation of antibiotic susceptibility should be carried out and clinicians should be aware about it to select the appropriate empiric regimen for *H.pylori* eradication