

Helicobacter Pylori Detection by Invasive and Noninvasive Diagnostic Tests from Dyspepsia Patients

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Abstract : Background: The accuracy of the most frequently used tests for diagnosing Helicobacter pylori is always under consideration in clinical settings. A reliable diagnosis is crucial to confirm the success of therapy. Objective: The aim of this research was to study the isolation frequency of H. pylori from patients compatible with gastritis or gastric ulcer and to compare some feasible non-invasive and invasive methods for the diagnosis of infection. Materials and Methods: Ninety-six gastric biopsy and blood samples were obtained with various gastroduodenal symptoms after obtaining informed consent. The biopsies were analyzed and compared using the culture, microscopic examination, histopathology, Rapid urease (RUT), serology, biochemical, antibiotic susceptibility test and molecular method. Results: A number of 40 (41.67%) were considered H. pylori positive in both histopathology and RUT. On the other hand, 46 patients were positive against anti IgA and IgG by ELISA. Eighteen biopsies were positive according to the culture test. This was further confirmed by endoscopic examination, urease, catalase and oxidase tests. A high percentage of resistance to polymyxin B, amoxicillin, and kanamycin was observed (100, 88.89, and 77.78%, respectively). A gene (Cag A) was also detected by using molecular technique which appeared positive in 16 patients. The sensitivity/specificity (%) of diagnostic method was 95/77 for histology, 100/83.5 for rapid urease, 85.7/90 for gram staining, 100/66.6 for IgG serology, 100/79.5 for IgA serology, 100/75.0 for PCR, 100/79.04 for combination of RUT and IgG serology and 100/92.4 for combination of RUT, gram staining and IgG serology. Conclusion: In view of the result obtained, PCR appeared to be the most reliable test. However, higher sensitivity and specificity were also recorded for other tests. So, for more accurate results, it is advisable not to rely solely on a single method for detection.

Keywords : helicobacter pylori, isolation, detection, culture, urease, polymerase chain reaction, antibiotic susceptibility test, dyspeptic patients

Conference Title : ICFTS 2024 : International Conference on Food Science and Technology

Conference Location : San Francisco, United States

Conference Dates : June 03-04, 2024