Detecting the helicobacter pylori 16S rNA gene in dyspepsia patients using real-time PCR

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ABSTRACT
Background: early detection of H. pylori is essential to prevent the development of infections into gastric malignancies. The coccoid form of H. pylori is difficult to detect either by culture or histopathology; however, it can be detected using molecular methods, such as real-time PCR. The study was expected to provide new information on the development of H. pylori detection. Methods: a cross-sectional study was conducted at the Gastrointestinal Endoscopy Center of Cipto Mangunkusumo Hospital between October 2016 and August 2017. The sampling method used was consecutive sampling. Biopsy from gastric antrum and corpus were performed in 64 patients. We collected 2 specimens from each site to be examined using real-time PCR and histopathology. Initially, we conducted real-time PCR optimization followed by application of clinical samples from gastric biopsy. Data analysis using McNemars χ2 and Kappa tests. Results: the real-time PCR showed 25% positivity, while the positive proportion of histopathological examination was 14%. Real-time PCR has a sensitivity and specificity 88.9% dan 85.5%, respectively. The McNemars x2 test showed that there is significantly different (p=0.039) between the two tests; kappa value (p=0.561). Conclusion: the real-time PCR examination is more sensitive than histopathology. This technique can improve diagnosis by 11% compared to histopathological examination.