

中文題目：檢測幽門螺旋桿菌感染：胃液聚合酶連鎖反應檢測或是快素尿素酶較好？

英文題目：Detecting *Helicobacter pylori* infection, which is better: PCR test of gastric juice or rapid urea test?

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Background: *Helicobacter pylori* (*H. pylori*) had been known as causative pathogen in gastritis and peptic ulcer disease. *H. pylori* infection is very common worldwide, occurring in 40-50% of the population in developed countries, in 80-90% of the population in developing regions, and about half of the people in Taiwan. Accurate diagnosis of *Helicobacter pylori* (*H. pylori*) infection is a crucial part in the effective management of many gastroduodenal diseases.

Aim: This study was designed to compare the detection of *H.pylori* between gastric juice PCR test and rapid urea test (CLO test).

Methods: We enrolled 326 patients ($N=326$) in our study. Gastric juice ($N=326$) was collected during endoscopic examination; DNA extracted from the gastric juice had been used to detect the gene of urease A and *cag A*, both of them represent *H.pylori* infection. The gastric juice from patients with *H.pylori* infection had shown polymerase chain reaction (PCR) products of urease A (414bp) or *cag A* (349 bp), (Fig. 1). On the other hands, we also performed endoscopic biopsy for the rapid urea test (CLO-test) at antrum and body at the same time. We defined the gold standard of infection *H.pylori* patient as below: (1) positive culture result, or (2) positive urea breath test. Then we compare both test with sensitivity, specificity, positive predictive value, negative predictive value, and accuracy,

Results: The sensitivity of gastric juice PCR was 93.0% (146/157), and the specificity of gastric juice PCR was 88.8% (150/169); the positive predictive value of gastric juice PCR was 88.5%(146/165), and the negative predictive value was 93.2% (150/161); the accuracy of gastric juice PCR was 90.8% (296/326). On the other hands, the sensitivity of CLO-test was 88.5% (139/157) and the specificity of CLO-test was 93.5% (158/169); the positive predictive value of CLO-test was 92.7% (139/150), and the negative predictive value was 89.8% (158/176); the accuracy of CLO-test was 91.1% (197/326).

Conclusion: We can detect urease A and *cag A*, the gene of *H.pylori*, using the gastric juice PCR test. Collecting gastric juice during endoscopy was more non-invasive and seems more extensive representation for the *H.pylori* infection compared to the CLO-test. We concluded that gastric juice PCR test had better sensitivity and negative predictive rate, and high accuracy for detecting *H.pylori* infection. The gastric juice PCR test in detecting *H.pylori* infection showed safer and more sensitive method than CLO-test.

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