中文題目: 幽門螺旋桿菌檢測方法的比較-胃液與細菌培養那個方法最好?
英文題目: Which method is better? Comparison gastric juice and culture to detect *H. pylor*i infection

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Background: The golden standards for diagnosis of helicobacter pylori infection are positive culture yield or positive urea breath test, in addition, positive histological test and rapid urease test are also considered to confirm diagnosis for *H. pylor*i infected patients. Although many infectious diseases can be proven from bacterial cultures, it is difficult to cultivate *H. pylor*i bacterium in which the incubation period is at least 5 days and at the same time, a sufficient amount of bacteria is required to successfully cultivate the bacterium. If cultivation is successful, antibiotic sensitivity test can be performed simultaneously. However, the sensitivity of *H. pylor*i culture in Taiwan is only 55.6% despite the high specificity. According to the data from KMUH gastroenterology, the sensitivity is only 62%. Most hospitals do not preform this test because of the low penentrance rate; therefore, culture is only done when treatment of h.pylori fails twice allowing the determinatioin ofantibiotic sesntivity for drug selection. Furthermore, cultures are obtained from tissues by gastric biopsies only on certain location of the stomach; on the other hand, specimens obtained from gastric juice provide a more extensive and less invasive sampling of the bacterium. However, the accuracy of diagnosis of *H. pylor*i by gastric juice is not known.

Material and Methods: **Sample collection:** We collected samples of gastric juice from 277 patients during panendoscope examinations. 150 of these patients were clinically diagnosed for *H. pylor*i, the other 127 patients were negative. **Pretreatment of gastric specimens:** After obtaining gastric juice sample, 6ml of the fluid was centrifuged at 12000rpm for 10 minutes. The supernatant was then discarded and 6ml of DMEM Eagle's medium was mixed with the precipitate. Extraction of the DNA was done within 1week and analyzed with polymerase chain reaction or Restriction fragment length polymorphisms PCR. This method is called gastric juice sample test. **Obtaining DNA from gastric juice:** We followed the instruction protocol of the DNeasy® Blood & Tissue kitQiagen，Germany）to collect the DNA of *H. pylor*i may be present in gastric juice content. NanoQuant plate（TECAN，Switzerland）was utilized to quantify the DNA. Polymerase chain reaction or Restriction fragment length polymorphisms PCR were used to identify the presence of *H. pylor*i bacterium and detect sensitivity of antibiotics in addition to analyze polymorphism of CYP2C19 gene of the host.

Results: From the gastric samples of 277 patients, 150 patients were diagnosed with *H. pylor*i infection, the other 127 patients were *H. pylor*i negative. Using gastric juice as a diagnostic test for *H. pylor*i, the sensitivity was 92.66%, specificity was 86.61%, positive predicate rate was 89.67%, negative predictive rate was 90.08% and the accuracy was 81.58%. On the other hand, when using culture for diagnosis, the sensitivity was 66%, specificity was 100%, positive predictive rate was 100%, negative predictive rate was 71.34% and accuracy was 81.58%.

Conclusion: For this study we developed a "gastric juice rapid test" that can quickly analyze if patient is infected with *H. pylor*i. The results revealed that the sensitive rate and accuracy were higher than bacterial cultures. The procedure is simple and the results quickly provide clinicians the right information to select the correct treatment to eradicate *H. pylori* infection. We suggest that during endoscope exams, gastric fluid can be collected additionally to quickly evaluate if the patient is infected with *H. pylori.*