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String Test for *Helicobacter pylori*

We were very pleased to read the paper by Samuels et al. (5) on the usefulness of the gastric string test for culture of *Helicobacter pylori*. At last, this nonendoscopic method for culture of *H. pylori* is used and recommended to colleagues in locations other than Europe. Samuels et al. mentioned that we achieved a 50% culture success rate with the Entero-Test, when in fact the success rate was 77.8% in the original article and 78.8% in a letter reply, respectively (2, 3). In the first study (2), the patients were not selected and had not been previously defined as *H. pylori* positive. We evaluated the endoscopic biopsy culture and the string test culture simultaneously, using the same culture media. Kopanski et al. (1) also found that the results of the string test culture were satisfactory in comparison to those of endoscopic biopsy culture. The sensitivity of the culture depends on many factors, such as the number and type of plates used, incubation time, and conditions, etc. If the string is inoculated in six plates, the sensitivity will obviously be higher than if it is inoculated in only two plates. Nevertheless, we consider that it is essential to simplify the culture of *Helicobacter*.

Unfortunately, there are few laboratories that perform antimicrobial testing of *Helicobacter* isolates, while others consider it complex and time-consuming. In a recent paper (4), we stated that we are in favor of introducing routine antimicrobial susceptibility testing of *H. pylori* and cited our experience using the string test, pointing out its convenience and low cost. Up till now, we have performed antimicrobial susceptibility testing for over 800 strains of *H. pylori* obtained with the string test, with inoculation of only two culture plates for the initial isolation.

Samuels et al. (5) suggested that posttreatment patients first receive follow-up testing with the urea breath test (UBT) and the string test be performed only when the UBT is positive. We consider this approach to be very suitable. However, in recently diagnosed patients who have not received any prior treatment, the need to perform the UBT prior to the string test is uncertain.

We also agree with Samuels et al. that the string test is not useful as a rapid urease test (CLOtest). In our experience, the main problem of performing the CLOtest using the string is the high number of false positives due to the presence of contaminant flora in the upper respiratory tract.

Our first publication aimed to provide information on a nonendoscopic method for culture of *H. pylori*. The article by Samuels et al. will certainly facilitate the increased use of this method. As the use of the string test becomes more frequent, more suggestions for improvement, including the most cost-effective type and number of culture plates, will be made.

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Emilio Pérez-Trallero*
Milagrosa Montes
Microbiology Department
Complejo Hospitalario Donostia
Pº Dr. Beguiristain s/n
20014 San Sebastián, Spain

*E-mail: labmikro@teleline.es

Authors' Reply

We note the important comments of Perez-Trallero and Montes above regarding the usefulness of the string test for noninvasive recovery of *H. pylori*. Our work (2) was based on their previous results, although, with more intensive laboratory methods, we were able to achieve a very high sensitivity (97%). Thus, the string test could be used as the main test for *H. pylori*, either for initial diagnosis or for follow-up posttreatment. However, we do not believe that culture and sensitivity are essential for initial diagnosis since current therapies give cure rates of greater than 80% (3). Therefore, initial diagnosis with serology or a simple UBT (1) is adequate for most patients. On the other hand, the string test can play an important role in patients who fail antibiotic therapy, in which case sensitivity testing is worthwhile. Even in follow-up, however, we believe that patients prefer the 10-min UBT, after which only the 20% of patients who are still *H. pylori* positive need undergo the string test. We reiterate the findings in our study that patients preferred the string test over endoscopy.

We do agree that there is room for improvement in the string test methodology, which is still rather labor-intensive, requiring so many culture plates.

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Barry J. Marshall
Helen M. Windsor
Department of Microbiology
University of Western Australia
QEII Medical Centre
Hospital Ave.
Nedlands, Perth 6907
Australia