mg/L. The addition of larger amounts of proteinaceous material would probably have also adversely affected the GCC broth. Undigested vegetable matter could have impaired the action of both selective antibiotics, again permitting the growth of facultative and obligate anaerobic enteric organisms. Several of these organisms have been shown to inhibit the growth of C. difficile in vitro.²

All of these factors, to a greater or lesser extent, probably simultaneously play a part in reducing the efficiency of GCC broth when a large inoculum is used. It is important that workers in routine clinical laboratories are aware that it is possible to "overload" selective enrichment broths containing antibiotics. Accordingly, therefore, we would recommend that the maximum inoculum size for 10 mL of GCC broth should be either 0.1 mL or 0.2 mL of a 25% suspension of stool.

RA BOWMAN
TV RILEY
Department of Microbiology,
University of Western Australia,
Queen Elizabeth II Medical Centre,
Nedlands 6009,
Western Australia

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Urease activity of Campylobacter pylori

Campylobacter pylori, first cultured in 1982, is increasingly being associated with gastritis and peptic ulceration.¹ Unlike most campylobacters, it possesses a powerful extracellular urease activity.² In acute C pylori gastritis stomach juice urea falls and ammonia rises,³ with an accompanying rise in pH.⁴ The cytopathic effect observed in gastric epithelial cells⁵ may be mediated by high local concentrations of ammonia. We decided to investigate this enzyme activity.

Colonies of C pylori were scraped off blood agar plates, suspended in phosphate buffered saline, then centrifuged. The supernatant was used as the source of urease activity. Aliquots were incubated with urea in buffer, and liberated ammonia measured colourimetrically by the method of Berthelot.

A pH profile showed two pH optima in each of three strains examined, at 5 and at 8. Activity was irreversibly inhibited at and below pH 4.5. The low pH activity was inhibited by phosphate ions, considerably at 10 mM, and almost completely at 250 mM, leaving the pH 8 activity almost unaffected. Both activities were inhibited by low concentrations of acetohydroxamic acid; kinetics suggested non-competitive inhibition of each.

We suggest the existence of two extracellular isoenzymes of urease produced by this organism. The low pH one may represent a partial adaptation to the acid environment of the healthy stomach. Hydroxamic acid derivatives have been used therapeutically in man;⁶ perhaps they may have some role in controlling the gastritis associated with C pylori infection, particularly if newer derivatives escape the suspicion of tetracycline and carcinogenicity suggested with older ones.

M TAYLOR
ON KARIM
Department of Medical Microbiology,
St Mary’s Hospital Medical School,
London W2 1PG

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Dipstick screening for bacteriuria

Boreland and Stoker recently reported the results of a valuable study of the use of dipstick analysis. Screen urines from children for bacteriuria.¹ After studying their report we cannot agree with their conclusion that the method described is suitable for routine use.

The reference culture method was the screening technique using blotting paper strips described by Leigh and Williams.² This was originally shown to be suitable for screening large groups of patients who may have asymptomatic infections such as pregnant women. It has not been shown to be suitable for use with specimens from symptomatic patients. In these cases a clinically confirmed method should be used—for example, one using calibrated loops.³ Boreland and Stoker did not indicate that their population was predominantly asymptomatic: 12% of their urines yielded significant growth compared with 5% of those studied by Leigh and Williams.

When strips yielded between five and 10 colonies Leigh and Williams recommended that repeat specimens of urine should be examined, as over 40% of the repeat specimens they tested contained more than 10⁵ organisms/ml. Boreland and Stoker gave no consideration to the problem of false results of urines with borderline colony counts.

The screening methods using dipstick analysis showed good predictive values for a negative result, but a positive result in a child’s urine is important because of the possible consequences of urinary tract infection in childhood. Of the 700 specimens examined, 14 yielded positive cultures, but were negative by the reagent strip methods. Thus 17% of culture positive specimens were not detected by dipstick screening. Concentrating on developing a method which detects negative urines well, the authors seem to have overlooked the clinical importance of paediatric bacteriuria.

The need for bacteriological examination of urine does place a large burden on laboratories, but in attempting to relieve this burden the importance of the results of such examination must not be overlooked.

GP CALDER
WN PENN
Department of Microbiology,
Preston Hall Hospital,
Maidstone,
Kent ME20 7NH

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