

CAN C. PYLORI BE ERADICATED? LONG TERM FOLLOW-UP ON 28 SUCCESSFULLY TREATED PATIENTS. B.J. Marshall, S.H. Caldwell, S.R. Hoffman, H.F. Frierson, R.L. Guerrant, R.W. McCallum. University of Virginia, Charlottesville, VA.

C. pylori does not usually respond to single agent antibiotic therapy and many investigators have reported 'recurrence' after apparent clearance of the bacterium.

Aim: The purpose of this study was to identify criteria which could be used to define bacteriologic cure.

Method: 114 patients with biopsy proven *C. pylori* were treated with at least 14 days of bismuth subsalicylate concurrently with an antibiotic, either metronidazole 1-1.5 g/day, amoxicillin 2 g/day or erythromycin 2 g/day. Endoscopy with multiple gastric biopsies for histology, culture and CLOtest and/or ^{14}C urea breath test were performed 28 days after therapy. All patients were then asked to return for repeat evaluations at 3, 6, and 9 months after initial clearance.

Results: At assessment 28 days after therapy there were 58 patients cleared of *C. pylori*. In 28 patients, at least one subsequent study has been performed at times ranging from 1 to 10 months after initial clearance. Specifically, 22 patients have been evaluated for at least 3 months, 9 for 6 months, and 5 for 9 months, representing a total of 125 patient months of follow-up. No patient has been found to be reinfected.

Conclusion: 1. Eradication of *C. pylori* is achievable. 2. Endoscopic and/or breath test evidence of *C. pylori* clearance four weeks after therapy is predictive of long-term cure. 3. Reinfection with *C. pylori* is apparently uncommon in the United States.

SIMPLIFYING THE UREA BREATH TEST FOR C. PYLORI. B.J. Marshall, M.W. Plankey, S. Hoffman, R.W. McCallum. University of Virginia, Charlottesville, VA.

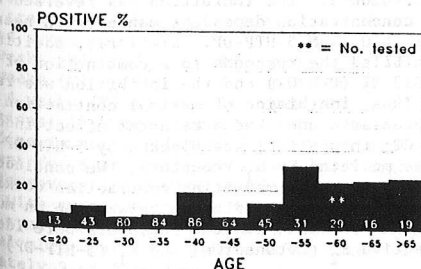
C. pylori may be diagnosed non-invasively with the urea breath test which in most reports has involved prolonged breath collection and ingestion of the isotope within a liquid meal. **Aim:** The purpose of this study was to decide whether a single breath sample could diagnose *C. pylori* by the ^{14}C urea breath test, and if so, what was the ideal time to take the sample. **Method:** Patients who had undergone previous gastric resection were excluded from the study. Fasting patients cleaned their teeth then swallowed 5 uCi of ^{14}C urea in 15 ml of water. Breath was collected into glass bottles containing 2 mmol of hyamine in 2 ml of methanol. Samples were taken at 2 minutes (to assess mouth flora) and at 15, 20, 25 and 30 minutes after ingestion of the isotope. They were counted in a beta counter and results were expressed as counts per minute (CPM), a value corrected for body weight (VALUE), and as an area under the excretion curve between 15 and 30 min (AREA). CP status was determined by histology and culture of multiple gastric biopsies taken at endoscopy. Data were analyzed independently by the histopathologist, microbiologist and nuclear medicine technologist. The normal range of ^{14}C excretion was defined as the mean + 3SD. of that seen in the CP- patients. **Results:** 49 CP+ patients and 55 CP- patients underwent their initial breath test during the study. In the table below, the sensitivity and specificity of the test is shown at each time point with the upper limit of the normal range in parentheses.

		15 min	20 min	25 min	30 min
CPM	sens.%	91(1237)	95(883)	94(724)	94(558)
	spec.%	98	96	98	98
VALUE	sens.%	91(0.83)	93(0.6)	94(0.5)	93(0.38)
	spec.%	98	96	98	98
AREA	sens.%	94(1.67)	spec.%	98	

CPM on a single breath sample taken at 20 min gave a sensitivity and specificity of 95%. **Conclusions:** 1) A single collection at 20 min is sufficiently accurate for routine use; 2) Correction of CPM for body weight does not improve the accuracy of the test. We recommend that in addition to the 20 min sample, collections at baseline and 2 minutes be considered as helpful in training the patient as well as alerting the investigator to possible methodological errors.

PREVALENCE OF C. PYLORI AND HISTORY OF UPPER GI INVESTIGATION IN HEALTHY VIRGINIANS. B.J. Marshall, S.H. Caldwell, Z.J. Yu, F. Darr, T. Chang, R.W. McCallum. University of Virginia, Charlottesville, VA and American Red Cross, Washington, D.C.

C. pylori has been proposed as an etiologic agent for gastritis, but the clinical relevance of the infection is controversial. **Aim:** The purpose of this study was to define the prevalence of *C. pylori* (and by implication, gastritis) in blood donors (BD's), and to see if presence of the antibody was a risk factor for dyspeptic disease. **Method:** Plasma was obtained from 510 BD's who completed a questionnaire detailing previous investigation or treatment for dyspepsia. In addition, 26 healthy elderly women, mean age 67 years, were tested by a ^{14}C urea breath test as well as serology. Plasma was analyzed by an ELISA method which in endoscopy patients has a sensitivity greater than 90%. **Results:** In the elderly women there was 100% concordance between ELISA and a breath test result (6 CP+, 20 CP-). In BD's antibody levels indicating infection were present in 10% below the age of 45 years and 25-30% above that age (Figure). *C. pylori* was more common in blacks than in whites (36% vs 12% $\chi^2=9.5$ $p<0.005$). Sex, smoking, alcohol and NSAID were unrelated to *C. pylori*. Antibody positive donors were twice as likely to have been investigated for dyspepsia (9% vs 19%, $\chi^2=9.9$, $p<0.005$). **Conclusions:** 1) In healthy, white Virginians *C. pylori* is uncommon. 2) Persons born after 1945 are less likely to have *C. pylori*. 3) *C. pylori* appears to be a risk factor for dyspepsia.



GI MANIFESTATIONS OF MIXED CONNECTIVE TISSUE DISEASE (MCTD). JB Marshall, JM Kretschmar, DC Gerhardt, DH Winship, GC Sharp. Dept of Medicine, University of Missouri School of Medicine, Columbia, MO.

Purpose: To ascertain the GI tract abnormalities in our large series of patients with MCTD.

Method: Between 1970 and 1988, 61 patients with MCTD have been evaluated here. The first 37 were part of a prospective longitudinal study. All manometric studies were interpreted by the same investigator.

Results: Heartburn (48%) and dysphagia (38%) were by far the commonest GI symptoms. 17% of 35 patients undergoing manometry had distal esophageal aperistalsis and 43% low amplitude peristalsis (<30 mm Hg). Proximal esophageal peristalsis was preserved in our patients. Upper esophageal sphincter hypotension was common and may represent a feature distinguishing MCTD from progressive systemic sclerosis. One patient had marked UES hypotension and recurrent aspiration, such as may occur with polymyositis, and which resolved with steroid therapy. Only 3 patients had esophageal strictures identified over a 6.3 year mean period of follow-up. Esophageal hypomotility was the most common cause of dysphagia. Sicca syndrome contributed to dysphagia in some patients. UGI/SBS in 54 patients showed 3 cases of delayed gastric emptying, 1 gastric bezoar, and 4 cases of proximal small bowel dilatation. Barium enemas identified no features characteristic of connective tissue disorders. We identified one case each of malabsorption, acute colonic and small bowel perforations due to vasculitis, chronic active hepatitis and acute pancreatitis.

Conclusion: Any area of the GI tract may be affected by MCTD, though the esophagus is the commonest location. The GI aspects of MCTD overlap with those of PSS, polymyositis and SLE.