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C. PYLORI - MODIFIED BIOPSY UREASE TEST, Cliodna A.M. McNulty, MRCPath and Julie C. Dent, FIMLS. Gloucester Public Health Laboratory, Gloucester, U.K.

To assess accurately the value of a diagnostic test large numbers of specimens need to be processed. This study compares Christensens urea broth (NaCl, 5g/l; KH_2PO_4, 2g/l; 40% urea, 50 ml/l; phenol red, 0.012g/l; peptone, 1g/l; glucose, 10g/l) used in specimens from 600 patients, with a modified urea broth (phenol red, 0.04g/l; peptone and glucose omitted) in 847 patients. Four biopsy specimens were taken from the gastric antrum; two were sent to histopathology and two to microbiology. Specimens for microbiology were smeared across a glass slide for Gram stain, chocolate and selective media for culture and then both specimens were crushed into 0.5 ml urea broth with a swab stick. The broth was left at room temperature for up to 24 hours.

	Christensens broth culture +ve(240)	Christensens broth culture -ve(360)	Modified broth culture +ve(344)	Modified broth culture -ve(503)
Biopsy urease +ve	221	2	331	1
Biopsy urease -ve	19	358	13	502
Specificity	99.4%		99.8%	
Sensitivity	92.1%		96.2%	
% +ve <1hour	60.5%		68.8%	

The modified broth was more sensitive, specific and gave faster results. Specimens yielding a profuse growth on culture gave faster results with the urease test, with the modified broth 71 of 75 such specimens were positive in less than 1 hour. The biopsy urease test is a quick, easy and cheap test for C. pylori in the gastric antrum. It can be used by the clinician in the office when laboratory facilities are unavailable.

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THE PREVALENCE OF C.PYLORI IN 1447 PATIENTS AT ENDOSCOPY. C.A.M. McNulty, MRCPath, J.C. Dent, FIMLS, J.S. Uff, FRC Path, G.A. Ford, MRCP, M.W.L. Gear, FRCS, S.P. Wilkinson, FRCP. Gloucestershire Royal Hospital, Gloucester, U.K.

To gain more insight into Campylobacter pylori (CP) infection we carried out a large prevalence study over a year (July 1986-87). All patients attending for upper gastrointestinal endoscopy were considered for inclusion in the trial. Referral and demographic details, symptoms, past medical, drug, smoking and alcohol history and endoscopic appearances were noted for each patient and entered into a relational database (R base clout). CP was detected by Gram stained tissue smears, the biopsy urease test, culture (graded 0-3) and histopathology (graded 0-3). The number of polymorphonuclear (PMN) and mononuclear (MONO) cells, mucus depletion, and intraepithelical cellular infiltration, were each graded 0-3. The % intestinal metaplasia and mucosal type was noted. The prevalence of CP was 42% (602 of 1447 patients). There was a 94% agreement between the detection of CP by culture and histology. There was a strong correlation between the presence of CP and histological proven chronic active gastritis, mucin depletion and peptic ulceration. Only 1.8% of patients with a PMN + MONO score of 0 had CP, while 92% with a score of 6 had CP. There was no correlation between the number of organisms seen on histology and the cellular infiltration.

	ENDOSCOPY			PMN + MONO SCORE						
	Normal	DU	GU	0	1	2	3	4	5	6
	518	117	84	487	197	78	88	177	170	204
CP +VE	174	89	54	9	12	21	59	145	147	188
CP -VE	344	28	30	478	185	57	29	32	23	16

The prevalence of CP infection increased with age. 48% of males and 35% of females had CP. Only 32% of patients who never smoked had infection, compared to 53% of smokers. There was no correlation between alcohol intake or symptoms and CP.

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EXPERIMENTAL HUMAN GASTRIC ULCER PRODUCED BY IN VITRO ELECTROCOAGULATION: EFFECT OF ACETYLCYSTEINE. Nirmal Mann M.D., F.A.C.G., and Peter Brawn M.D., VA Medical Center, Texas A&M Univ. Coll. of Med., Temple, TX.

We have previously shown that human gastric mucosa can maintain histologic integrity for 8 h when incubated in Trowell T-8 medium (M) at 37°C (GI Endosc 32:178,1986). We have also established that gastric ulcer (GU) produced on endoscopically obtained gastric biopsies by in vitro electrocoagulation and incubated in M has histologic features resembling human chronic GU (GI Endosc. 32:178,1986). AIM: To evaluate the effect of various concentrations of acetylcysteine (ACY) on this in vitro ulcer model. Method: Sixty endoscopically obtained antral biopsy specimens were divided into 6 groups of 10 each. An ulcer was produced by monopolar electrocoagulation applied for 2 seconds at a setting of 3 (Cameron-Miller). After production of ulcer either they were put in 5 ml M with saline placebo (previously established control, GI Endosc. 32:179,1986) or M with various concentrations of ACY or ACY + ZnSO4 or ACY + N-ethylmaleimide (NEM) and gassed for 5 minutes (95% O_2 + 5% CO_2) and incubated at 37°C for 8 h. Then they were fixed in formalin and sections were stained with H&E. The slides were evaluated blindly and mean healing score (GI Endosc 32:179,1986) for each group was calculated.

	Groups	Healing Score (Mean+SEM)
I	M + 0.2 ml. saline	1.2 ± 0.4
II	M + ACY 0.1 mg.	3.0 ± 0.3
III	M + ACY 0.2 mg.	3.4 ± 0.3
IV	M + ACY 0.5 mg.	1.2 ± 0.2
V	M + ACY 0.2 mg. + NEM 0.01 mg.	0.8 ± 0.1
VI	M + ACY 0.2 mg. ZnSO4 0.02 mg.	3.8 ± 0.3

Results: In this in vitro model of GU low conc of ACY (Groups II&III) had a significant healing effect ($p<.025$). As the beneficial effect of ACY was countered by NEM (Group V), the mechanism is probably through activation of SH groups. The reason for failure of high conc ACY (Group IV) is not known but probably it is not through excess of SH groups as ACY and ZnSO4 had an additive effect (Group VI).

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ERADICATION OF CAMPYLOBACTER PYLORI INFECTION WITH BISMUTH SUBSALICYLATE AND ANTIBIOTIC COMBINATIONS. B.J. Marshall, K.R.Dye, M. Plankey, H.F. Frierson, S.R.Hoffman, R.L.Guerrant, R.W. McCallum. Department of Internal Medicine, University of Virginia, Charlottesville, VA 22908.

Eradication of Campylobacter pylori has been shown to improve histological gastritis and reduce the recurrence rate of duodenal ulcer. While suppression of the organism can be achieved easily, cure of the infection is difficult. In this study we aimed to find a safe, effective regimen for eradication of C.pylori. Consecutive patients with peptic ulcer disease (30%) or non-ulcer dyspepsia (70%) and C.pylori were treated with 14-21 days of bismuth subsalicylate (BSS), 520 mg QID. In addition, amoxycillin 500 mg QID (25 pts.), erythromycin 250-500 mg QID (20 pts.),or metronidazole 1-1.5 gms/d (19 pts) were given during the second and third weeks of therapy. Patients were reinvestigated 4 weeks following completion of therapy. RESULTS: Three patients experienced diarrhea but all were able to complete therapy. The eradication rates for the three combinations were 28%, 25%, and 79%, respectively. When the initial isolate was sensitive to metronidazole on disc testing (>20mm dia. zone),the eradication rate was 86%. There were no reinfections in 7 pts. followed for 4-28 wks (mean 14 wks) after eradication. After therapy, histology revealed a slight excess of mononuclear cells but neutrophils had disappeared in 6 of the 7.

We conclude that C.pylori can be safely eradicated with a short course of BSS-antibiotic, although more effective regimens are needed. Reinfection after eradication is unlikely to occur.