

YIELD OF ULTRASONOGRAPHY IN PAKISTANI PATIENTS WITH EPIGASTRIC PAIN SYNDROME-LIKE DYSPEPSIA

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ABSTRACT

BACKGROUND: In Pakistan, upto 23% of patients initially presenting to a gastroenterologist, do so with chronic dyspepsia. Cost constraints limit the scope of evaluation in this developing country. **OBJECTIVES:** To determine the yield of routine ultrasonography noninvasive testing in patients with epigastric pain syndrome-like chronic dyspepsia in Karachi, Pakistan. **METHODS:** Adult patients (aged 18-49) with intermittent epigastric pain or burning for greater than 6 months were prospectively enrolled in the study. Patients with alarm symptoms, NSAID use, and those with predominately postprandial symptoms were excluded. The following investigations were done: LFTs, HBsAg, HCV antibody, ESR, TTG IgA, Helicobacter pylori antibody, serum amylase, and an abdominal ultrasound. **RESULTS:** One thousand patients with chronic dyspepsia were enrolled. The average age was 37 years. 59% were female and 41% were male. Associated symptoms were nausea (43%), vomiting (24%), heartburn (63%), and bloating (17%). Abdominal ultrasonography was normal in 74%; 19% had a fatty liver on ultrasound and 6% had gallbladder stones or polyps. LFTs were normal in 86%. Hepatitis B and C testing were positive in 10% of patients, each. H. pylori serology was positive in 64%. **CONCLUSIONS:** In Pakistani patients with epigastric pain syndrome-like dyspepsia, the yield of noninvasive testing is low, except for H. pylori testing. A majority (64%) of patients were H. pylori positive. Ultrasonography was normal in 74% of patients. Further studies are needed to evaluate the cost effectiveness of different tests, and the yield of endoscopy in this patient population.

Keywords: Dyspepsia, helicobacter pylori, ultrasound, fatty liver

Background

In Pakistan, upto 23% of patients initially presenting to a gastroenterologist, do so with chronic dyspepsia (unpublished data, Ahmed). Cost constraints limit the scope of evaluation, especially endoscopic evaluation, in this developing country.

Objective

The aim of this study was to determine the yield of routine noninvasive testing in patients with epigastric pain syndrome-like chronic dyspepsia in Karachi, Pakistan.

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Methods

Adult patients (aged 18-49 years) with intermittent epigastric pain or burning for greater than 6 months were prospectively enrolled in the study. Patients were recruited from outpatient gastroenterology clinics. Patients with alarm symptoms, NSAID or alcohol use, and those with predominately postprandial symptoms were excluded. Alarm symptoms included weight loss, hematemesis, melena, dysphagia, early satiety, odynophagia, jaundice, a family history of upper GI malignancies, or a palpable abdominal mass on physical examination.

The following investigations were done: liver function tests (LFTs), hepatitis B surface antigen (HBsAg), hepatitis C virus (HCV) antibody, ESR, tissue transglutaminase (TTG) IgA, Helicobacter pylori (H. pylori) antibody, serum amylase, and an abdominal ultrasound.

The study was approved by our Institutional Review Board.

Results

One thousand patients with chronic dyspepsia were enrolled. The average age was 37 years; 59% (592) were female and 41% (408) were male. Associated symptoms were nausea (43%), vomiting (24%), heartburn (63%), and bloating (17%).

Abdominal ultrasonography was normal in 74%. Ultrasonography revealed a fatty liver in 19% and 6% had gallbladder stones or polyps.

LFTs were normal in 86%. Elevated ALT was seen in 12%. Hepatitis B and C testing were positive in 10% of patients, each. ESR and TTG IgA were normal in 99% and 98%, respectively. A positive H. pylori serology was seen in 64%. Serum amylase and CBC were normal in 99% and 93%, respectively.

Discussion

This study shows that with the exception of Helicobacter pylori testing, the yield of noninvasive testing and ultrasonography in Pakistani patients with epigastric pain syndrome-like dyspepsia is low. H. pylori serology was positive in 64% of patients. No community-based H. pylori prevalence data is available from Pakistan. However, hospital-based studies on dyspeptic patients have reported a prevalence as high as 80%.¹ Multiple investigators have found that a test-and-treat strategy is a cost-effective approach to the management of dyspepsia.² However, clinical studies on the outcome of H. pylori eradication in dyspeptic patients have yielded conflicting results.³⁻⁵

ROME III subclassifies functional dyspepsia into epigastric pain syndrome and postprandial distress

syndrome. We chose to focus on patients presenting with epigastric pain-like symptoms and excluded those with predominately postprandial symptoms. Studies evaluating abdominal ultrasonography in dyspepsia report few abnormalities apart from incidental cholelithiasis.^{6,7} Our results were similar with 6% having asymptomatic gallstones or gallbladder polyps and 19% having a fatty liver. It is likely that the gallstones found were incidental finding unrelated to the epigastric pain being investigated, given that patients with post prandial symptoms were excluded from this study. Incidentally found gallstones do not require intervention. Ultrasonography has been used to evaluate gallbladder motility in patients with the postprandial distress syndrome variant of functional dyspepsia.⁸ Nonalcoholic fatty liver disease is amongst the most common liver diseases seen currently. Indeed, in this series, 19% of patients had a fatty liver on ultrasound. However, this fatty liver was unrelated to the epigastric pain or burning being investigated. In this study, markers for hepatitis B and C were each positive in 10% of study patients. Pakistan falls in an area of high prevalence for hepatitis C and intermediate prevalence for hepatitis B. Epidemiologic studies show the prevalence in Pakistan of hepatitis C is 4.9% and hepatitis B is 2.5%.⁹ We found a higher prevalence of hepatitis B and C in our study cohort than what has been reported for the general population. The most significant risk factor for chronic viral hepatitis in Pakistan is the reuse of unsterilized needles.¹⁰ It is possible that our higher than expected prevalence of hepatitis B and C is due to the selection of a cohort of patients with prolonged symptoms who are more likely to seek medical care and have previously sought care where they may have been exposed to injections for blood tests and for the administration of parenteral medications. Our study is limited by the lack of endoscopy data on these patients. Upper endoscopy has an important role in the evaluation of chronic dyspepsia symptoms. In Pakistan, a developing country where the average income is \$650 per year, government subsidized health insurance is nonexistent, and the majority of its 180 million population live in rural areas where endoscopy facilities are not available, endoscopy frequently can't be done. The American

College of Gastroenterology dyspepsia management guidelines recommend endoscopy in patients greater than 55 years of age or those with alarm symptoms.¹¹ We excluded patients with alarm symptoms for this study as well as anyone aged 55 years or older, thus reducing the likelihood that significant pathology has been missed.

A further limitation of this study was the lack of a single ultrasonographer, with documented experience, performing all the ultrasound exams. The results of ultrasonography are operator dependent and can vary depending on the operator's experience. However, the diversity of ultrasonographers in this study is closer to real world experiences.

In Pakistani patients with epigastric pain syndrome-like dyspepsia, the yield of ultrasonography and noninvasive testing is low, except for H. pylori testing. A majority (64%) of patients were H. pylori positive. There is a significant overlap with GERD. Further studies are needed to evaluate the cost effectiveness of different tests and diagnostic algorithms, and the yield of endoscopy in this patient population.

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