First Clinical Judgment by Primary Care Physicians Distinguishes Well Between Nonorganic and Organic Causes of Abdominal or Chest Pain

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OBJECTIVE: To evaluate the accuracy of a preliminary diagnosis based solely on patient history and physical examination in medical outpatients with abdominal or chest pain.

DESIGN: Prospective observational study.

SETTING: General medical outpatient clinic in a university teaching hospital.

PARTICIPANTS: One hundred ninety new, consecutive patients with a mean age of 44 years (SD = 14 years, range 30-58 years) with a main complaint of abdominal or chest pain.

MEASUREMENTS AND MAIN RESULTS: The preliminary diagnosis, established on the basis of patient history and physical examination, was compared with a final diagnosis, obtained after workup at completion of the chart. A nonorganic cause was established in 66 (59%) of 112 patients with abdominal pain and in 65 (83%) of 78 with chest pain. The preliminary diagnosis of "nonorganic" versus "organic" causes was correct in 79% of patients with abdominal pain and in 88% of patients with chest pain. An "undoubted" preliminary diagnosis predicted a correct assessment in all patients with abdominal pain and in all but one patient with chest pain. Overall, only 4 patients (3%) were initially incorrectly diagnosed as having a nonorganic cause of pain rather than an organic cause. In addition, final nonorganic diagnosis (n = 131) was compared with long-term follow-up by obtaining information from patients and, if necessary, from treating physicians. Follow-up information, obtained for 71% of these patients after a mean of 29 months (range 18-56 months) identified three other patients that had been misdiagnosed as having abdominal pain of nonorganic causes. Compared with follow-up, the diagnostic accuracy for nonorganic abdominal and chest pain at chart completion was 93% and 98%, respectively.

CONCLUSIONS: A preliminary diagnosis of nonorganic versus organic abdominal or chest pain based on patient history and physical examination proved remarkably reliable. Accuracy was almost complete in patients with an "undoubted" preliminary diagnosis, suggesting that watchful waiting can be recommended in such cases.

KEYWORDS: abdominal pain; chest pain; outpatients; nonorganic diagnosis; patient history.


Abdominal and chest pain are among the most frequent main complaints of patients in ambulatory care.1,2 A substantial percentage of these complaints do not have readily discernible organic causes. Nonorganic diagnoses are made in up to 60% of patients in primary care that present with abdominal pain,2 and in approximately 80% of patients with chest pain.1 An extensive workup in patients with abdominal or chest pain suspected of having nonorganic causes may identify only a few patients with organic causes and may therefore have a very low diagnostic yield.4-5 This suggests that additional and sometimes costly investigations might be unnecessary.1,5-12

There are a few studies on the diagnostic accuracy of physicians' initial assessments of nonorganic versus organic diagnoses in patients with abdominal or chest pain in primary care.1,2,13-15 However, most of these studies are not prospective, and none are with patients in general medical clinics that include a long-term follow-up. Furthermore, it is not entirely clear how diagnostic accuracy varies with the degree of certainty that the primary care physician attaches to the initial diagnosis. Consequently, primary care physicians are often mired in doubt about whether to rely on their initial and preliminary diagnosis of a nonorganic cause of pain or whether to initiate more extensive testing.

The aim of this prospective study was to appraise the quality of the physician's initial diagnostic assessment based on patient history and physical examination for patients presenting in general medical outpatient clinics with abdominal or chest pain. Two comparisons were performed. Initial diagnoses characterized as "undoubted" or "probable" were compared with (1) the final diagnosis established after workup and completion of the chart, and (2) long-term follow-up results.
April through June 1992, Outpatients who were seen in Workup with a very high level of confidence by the involved physicians, An "undoubted" preliminary diagnosis was based on characteristic and specific findings allowing a diagnosis. The most frequently performed investigations in patients with chest pain were chest radiography and treadmill ergometry. In addition to treadmill ergometry, myocardial perfusion scintigraphy was done particularly in patients with angina-like chest pain or cardiovascular risk factors.

Based on the diagnosis, reasons for abdominal or chest pain were classified as being of nonorganic versus organic causes. Nonorganic causes of abdominal pain were unspecific pain symptoms such as nonulcer dyspepsia and irritable bowel syndrome. Organic causes of abdominal pain were gastritis, peptic ulcer, parasitoses, enteritis, motility disorders due to alcohol consumption, cholelithiasis, cholecystitis, pancreatitis, and diverticulitis. Nonorganic causes of chest pain were unspecific chest pain symptoms and anxiety disorders. Organic causes of chest pain were coronary heart disease of any stage, pleuritis, tracheobronchitis, esophageal reflux, chest wall trauma, and tumors.

"Gold Standard" Diagnosis

A final diagnosis was established by the resident and attending physician A when patients were discharged from the care of the Medical Outpatient Clinic, i.e., after test results were entered into the chart and a diagnosis was made. Subsequently, all diagnoses were analyzed together by attending physician B and the resident. A second diagnosis was reached, however, because attending physician B was not blinded to the study aims or the preliminary diagnosis; subsequently, another independent attending physician (C), who was blinded to the aims of the study and the preliminary diagnosis, reviewed all charts and made the final diagnosis. The second and third "final" exact diagnoses were compared using the Kappa test. Thereafter, final diagnoses were reevaluated and classified as being either nonorganic or organic by consensus between attending physicians B and C. This final consensus decision served as the gold standard to assess sensitivity, specificity, accuracy, and the likelihood ratio of the preliminary diagnosis.

Follow-up of Patients with Nonorganic Causes of Pain at Final Diagnosis

Patients with nonorganic abdominal or chest pain were contacted after a mean of 20 months (range 18–56 months) after their first consultation to verify the diagnosis. Telephone interviews or, if necessary, ambulatory checkup examinations at our institution were executed. To reach as many patients as possible, telephone calls were repeated. When needed, specially trained interpreters helped to recruit as many patients as possible for fol-