

Study examines reliability of clinical and pathological diagnoses of Barrett's esophagus

May 14 2009

In a review of more than 2,000 patients coded for Barrett's esophagus, electronic diagnosis overestimated the prevalence of the disease according to researchers in California. They found that only 61.9 percent of patients assigned a billing diagnosis code for Barrett's esophagus actually had Barrett's esophagus after a manual record review. The study evaluated the accuracy of diagnostic codes for Barrett's esophagus by contrasting codes from electronic databases with diagnoses from a detailed medical record review. Researchers also evaluated the reproducibility of a pathologic diagnosis of Barrett's esophagus between two pathologists and between a single pathologist on two different occasions. The study appears in the May issue of *GIE: Gastrointestinal Endoscopy*, the monthly peer-reviewed scientific journal of the American Society for Gastrointestinal Endoscopy (ASGE).

Medical coding translates a patient's diagnosis [International Classification of Disease, 9th revision (ICD-9-CM) codes], pathology results [Systematized Nomenclature of Medicine (SNOMED) codes] and procedures [Current Procedural Terminology (CPT®) codes] into universal medical code numbers that can be recorded in an electronic database. Diagnostic and procedure codes are used for a variety of reasons including insurance reimbursement, to track diseases and for statistical analysis. Payers require accurate reporting of diagnosis coding to explain why a service was provided to a patient.

Two reasons may explain the discrepancy between the electronic coding of [Barrett's esophagus](#) and the "final diagnosis" from pathology results.

First, some physicians will report the diagnosis of Barrett's esophagus (ICD-9-CM code 530.85-Barrett's esophagus) based on visual appearance when the final pathologic diagnosis does not confirm Barrett's esophagus. This scenario can pertain in office and Ambulatory Surgery Center facilities where physicians are likely to choose their own diagnosis code before they receive pathology results. Secondly, hospital-based coders also report "rule out" diagnoses and are thus likely to over-code Barrett's esophagus when the physician includes the possibility of Barrett's esophagus in the visual description.

Barrett's esophagus is a condition where the lining of the esophagus changes due to chronic inflammation, generally from gastroesophageal reflux disease (GERD). Definitive diagnosis requires a biopsy, taken at upper endoscopy, demonstrating replacement of the normal cell lining with one more like the cell lining of the small intestine. This is also known as intestinal metaplasia (IM). Barrett's esophagus itself has no specific symptoms, but this change can increase the risk of esophageal adenocarcinoma (a type of esophageal cancer). Barrett's esophagus can be readily detected during an upper endoscopy but must be confirmed by biopsies (tissue samples that are examined by a pathologist). The intent is to diagnose this condition, treat it medically, and follow it over time to detect changes indicating that a cancer may be developing.

"We found that a pathologic diagnosis of esophageal intestinal metaplasia is highly likely to be reproduced by a separate review of the slides. In addition, the modest intraobserver variation seen for a single pathologist suggests that a proportion of the discordance for pathology reviews between different pathologists may result from somewhat random misclassification rather than from an incorrect reading by the original pathologist," said study lead author Douglas A. Corley, MD, PhD, Division of Research, Kaiser Permanente. "In contrast, a coded diagnosis of Barrett's esophagus was confirmed by record review only 61.9 percent of the time, a number that is likely too low by itself for

either clinical or research uses without supplemental manual verification. However, among the substantial proportion of [patients](#) who had both a SNOMED (pathology code) and an ICD (billing code) diagnosis, record review confirmed a diagnosis in 85.4 percent."

Patients and Methods

The study was conducted within the Kaiser Permanente, Northern California (KPNC) population, an integrated health services delivery organization. KPNC contains approximately 3.3 million members (approximately one third of the insured population in the region). Researchers identified all patients who received a Barrett's esophagus diagnosis between 1994 and 2005 according to ICD-9-CM codes 530.2 (Ulcer of esophagus) and 530.85 (Barrett's esophagus), which at KPNC were uniquely coded on reporting sheets as "Barrett's esophagitis" at the time of an outpatient visit, and the SNOMED code M73330 (Barrett's esophagus). SNOMED codes are commonly used by pathology departments for assigning specific diagnoses.

This search identified 5,953 patients with a Barrett's esophagus diagnosis in the electronic database: 1,803 (30.3 percent) with only a SNOMED diagnosis, 1,630 (27.4 percent) with only an ICD-9-CM diagnosis, and 2,520 (42.3 percent) with both a SNOMED and an ICD-9-CM diagnosis. From the written and electronic medical records, researchers retrieved upper endoscopy and relevant pathology reports from a subset of 2,470 subjects (not the entire group due to resource limitations).

Reviews were performed by a board-certified gastroenterologist for 1,221 subjects and by professional medical record data abstractors (trained by the gastroenterologist and approximately a 10 percent subset reviewed by the gastroenterologist) for 1,249 subjects; the verification rates for both groups were comparable and are presented together in the study. The reviewer recorded whether each subject met the criteria for

diagnosis, and if they did not meet the diagnosis why they were excluded or whether there was insufficient information to make an assignment. Standard descriptive statistics were calculated.

Researchers evaluated interrater reliability by having a separate pathologist (blinded to the results of the first pathologist) review pathology slides from 616 patients. In addition, the referral pathologist conducted a blind rereview of 44 slides he had previously reviewed during the three year duration of the study.

Results

After medical record review, an assignment of "Barrett's esophagus" was confirmed in 1,530 (61.9 percent) and rejected in 848 (34.3 percent), and there were insufficient data in 92 (3.7 percent) of all subjects. A diagnosis was confirmed among 437 of 798 patients (54.8 percent) with a SNOMED diagnosis alone, 153 of 571 patients (26.8 percent) with an ICD diagnosis alone, and 940 of 1,101 patients (85.4 percent) who had both a SNOMED and an ICD diagnosis of Barrett's esophagus. If any ICD diagnosis was used (regardless of whether a SNOMED diagnosis was assigned), a diagnosis was confirmed among 1,093 of 1,672 patients (65.4 percent).

An initial pathologic diagnosis of esophageal intestinal metaplasia in this population was highly likely to be confirmed with a slide review from a second referral pathologist. Therefore, a second slide review provided relatively little additional value. Patients identified with either an ICD or a SNOMED code for Barrett's esophagus provided the greatest sensitivity for detecting patients with a Barrett's esophagus diagnosis within a population; however, this was only moderately accurate. Identifying patients with both ICD and SNOMED codes correctly classified approximately 85.4 percent of subjects compared with [medical record](#) review, but this method only detected 61 percent of all

patients with Barrett's esophagus. The authors emphasized that the proportion of patients confirmed to have Barrett's esophagus likely represents the minimum number given the strict criteria used.

Researchers concluded that electronic coding alone overestimates the prevalence of Barrett's esophagus, and most clinical and research uses will require a manual verification of disease status. These results can help inform diagnoses of Barrett's esophagus for patient care, health policy, and clinical research. An accompanying editorial by Joel H. Rubenstein, MD, MSc, Veterans Affairs Center for Clinical Management Research, Division of Gastroenterology, University of Michigan Medical School, Ann Arbor, appears in the May issue and offers steps endoscopists and pathologists can take regarding the diagnosis of Barrett's esophagus.

Source: American Society for Gastrointestinal Endoscopy

Citation: Study examines reliability of clinical and pathological diagnoses of Barrett's esophagus (2009, May 14) retrieved 17 April 2024 from <https://medicalxpress.com/news/2009-05-reliability-clinical-pathological-barrett-esophagus.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.