Management of Barrett's high-grade dysplasia: initial results from a population-based national audit

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Background and Aims: Previous studies reported significant variation in the management of patients with Barrett's esophagus. However, these are based on self-reported clinical practice. The aim of this study was to examine the management of high-grade dysplasia in Barrett's esophagus in England by using patient-level data and to compare practice with guidelines.

Methods: From April 2012 to March 2013, National Health Service (NHS) trusts in England prospectively collected data on patients newly diagnosed with high-grade dysplasia (HGD) of the esophagus as part of the National Oesophago-Gastric Cancer Audit. Data were collected on patient characteristics, diagnosis and endoscopic findings, treatment planning, and therapy.

Results: Between April 2012 and March 2013, NHS trusts reported 465 cases of HGD. Diagnosis was confirmed by a second pathologist in 79.4% of cases (270/340), and 86.0% (374/465) had their treatment planned at a multidisciplinary team meeting. A total of 290 patients (62.4%) were managed endoscopically (frequently with endoscopic resection or radiofrequency ablation), whereas 26 patients (5.6%) had esophagectomy. The proportion of patients managed by surveillance varied by age ($P < .001$), ranging from 19.5% in patients aged <65 years to 63.8% in patients aged ≥85 years. More patients received active treatment if their cases were discussed at a multidisciplinary meeting (73.5% vs 44.3%; $P < .001$) or managed at higher-volume trusts (87.8% vs 55.4%; $P < .001$).

Conclusions: There was marked variation in the management of HGD across England, with a third of patients receiving no active treatment. Patients discussed at a specialist multidisciplinary meeting or managed in high-volume trusts were more likely to receive active treatment. (Gastrointest Endosc 2016;83:736-42.)

In recent years, there has been a significant rise in the incidence of both Barrett's esophagus (BE)[1] and esophageal adenocarcinoma.[2] BE is a premalignant condition, with progression through a dysplasia-carcinoma sequence to esophageal adenocarcinoma.[3] The risk of progression to cancer increases from 0.1% per year for nondysplastic BE[4] to 5.6% per year if high-grade dysplasia (HGD) is present.[5]

Surveys of clinicians in the United Kingdom between 1997 and 2006 found wide variation in the reported management of HGD.[6-9] However, these results were not based on patient-level data. Previous surveys may represent clinical uncertainty about the most appropriate treatment, but they also covered a period during which new treatments were developed. As recently as 2005, surgery was considered the preferred treatment modality for BE with evidence of HGD,[10] but this is associated with significant morbidity and mortality even in high-volume centers.[11] Since then, newer endoscopic treatment modalities have become more widely available, such as

Abbreviations: BE, Barrett's esophagus; BSG, British Society of Gastroenterologists; ESD, endoscopic submucosal dissection; HGD, high-grade dysplasia; MDT, multidisciplinary team; NHS, National Health Service; NOGCA, National Oesophago-Gastric Cancer Audit; RFA, radiofrequency ablation.

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EMR and radiofrequency ablation (RFA). These have been shown to produce good outcomes with a low rate of adverse events.[12] As a result, the most recent guidelines have recommended endoscopic treatment of BE with HGD, in preference to either surgery or surveillance alone.[13,14]

It is widely accepted that operative outcomes after surgery for esophageal cancer are better in high-volume centers,[15-17] and this has resulted in the centralization of esophagogastric cancer services in the United Kingdom.[18] Evidence on the effect of treatment volumes on the outcomes of endoscopic interventions for HGD is more limited. A recent observational study from Australia demonstrated that detection and staging of esophageal cancer within BE was improved by assessment in specialist centers.[19] Van Vilsteren et al[20] also found that rates of adverse events associated with endoscopic resections were higher in the hands of less-experienced endoscopists. On the basis of this evidence, the United Kingdom guidelines on the management of BE suggest that endoscopic resections should be performed in high-volume tertiary-care referral centers (managing at least 15 cases per year).[13]

In 2006, the National Oesophago-Gastric Cancer Audit (NOGCA) was established to investigate whether care received by patients with esophagogastric cancer in England was consistent with recommended practice and to assess where improvements could be made. In 2012, the dataset was extended to prospectively collect records for all patients newly diagnosed with HGD of the esophagus in England (diagnosis of HGD was based on the patient's original pathology report). This dataset is the first to provide data on the baseline patient characteristics, treatment planning process, and treatment modality choices at a national level. In the long term, this database will allow for study on temporal changes in treatment choices, rates of progression to cancer, and survival.

The aims of this study were to provide an initial description of this cohort of patients, a summary of treatment modalities used in England, and a comparison of current practice with national guidelines.[13] The initial phase of the audit was entirely observational in its design. All decisions regarding the management of patients and the choice of treatment were left to the treating physician and/or team.

METHODS

Study population and data collection

Within England, acute hospital services in the National Health Service (NHS) are organized into acute trusts, as such, all English hospitals are part of an NHS trust. These organizations have a single management structure but can consist of one or more separate hospitals in order to provide the required range of services to a particular patient population. The NOGCA aims to collect data on all patients diagnosed with HGD of the esophagus in English NHS trusts.

The British Society of Gastroenterologists guidelines recommend that all patients with HGD, for whom therapy is considered, have their cases discussed at a specialist upper GI multidisciplinary team (MDT) meeting that deals with cases of esophagogastric cancer and dysplasia.[13] This team usually would include a gastroenterologist, a surgeon, a pathologist, and a radiologist. In 2012, 92% of trusts reported having a specific mechanism to ensure that all new cases of esophageal HGD were discussed at their specialist upper GI MDT meeting.[21] This could be either at the local hospital, or the patient could be referred to the local specialist center for discussion at the upper GI MDT meeting. As part of the national data collection efforts, repeated newsletters were sent by the Health and Social Care Information Centre to clinical audit leads at individual trusts to ensure that they were aware of the need to include patients with HGD in the NOGCA. In addition, the Royal College of Pathologists contacted all pathologists with an interest in upper GI pathology in England on behalf of the NOGCA to update them on the inclusion of HGD in the NOGCA and to remind them of the requirement to refer all patients with a new diagnosis of HGD to the MDT meeting.

Through the specialist MDT patient records, trusts were requested to submit data on all patients with HGD to the audit via an online reporting system. Because 92% of trusts have specific mechanisms in place to ensure that all cases of HGD are discussed at the upper GI MDT meeting and recorded in the MDT information system,[21] the identification of new cases does not rely on the support of individual clinicians. In comparison to newly diagnosed esophagogastric cancer patients and those undergoing a surgical resection (for which accepted disease and procedure classification systems are available), case-ascertainment rates for patients with HGD cannot be established reliably because no common national classification system exists. Nevertheless, because data collection on these patients is governed by the same policies and operational procedures as those for esophagogastric cancer, case-ascertainment rates are expected to be high. Moreover, participation in the NOGCA is mandatory, and all NHS trusts need to demonstrate their participation levels in this national clinical audit via their quality accounts. NHS trusts are required by the Department of Health to submit their externally audited quality accounts, including quality of data collection and outcomes for this and other audits, to the Secretary of State.

Within each trust audit coordinators manage the input of data into the audit, with assistance from clinical teams where needed to clarify clinical responses. Data could be uploaded to the audit in 2 ways: if data were already being collected locally then the relevant fields could be extracted and uploaded to the audit database. Alternatively, data could be collected manually via a secure Web-based data