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Quality Indicators for the Management of Barrett's Esophagus, Dysplasia, and Esophageal Adenocarcinoma: International Consensus Recommendations from the American Gastroenterological Association Symposium

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Abstract

The development of and adherence to quality indicators in gastroenterology, as in all of medicine, is increasing in importance to ensure that patients receive consistent high-quality care. In addition,

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Supplementary Material

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Conflicts of interest

The complete list of author conflicts of interest can be found in the online version of the article.

government-based and private insurers will be expecting documentation of the parameters by which we measure quality, which will likely affect reimbursements. Barrett's esophagus remains a particularly important disease entity for which we should maintain up-to-date guidelines, given its commonality, potentially lethal outcomes, and controversies regarding screening and surveillance. To achieve this goal, a relatively large group of international experts was assembled and, using the modified Delphi method, evaluated the validity of multiple candidate quality indicators for the diagnosis and management of Barrett's esophagus. Several candidate quality indicators achieved >80% agreement. These statements are intended to serve as a consensus on candidate quality indicators for those who treat patients with Barrett's esophagus.

Keywords

Barrett's Esophagus; Consensus Statements; Quality Indicators; Gastroesophageal Reflux Disease; Low-Grade Dysplasia; High-Grade Dysplasia; Esophageal Adenocarcinoma; Endoscopic Mucosal Resection; Radiofrequency Ablation; Barrett's Surveillance; Prague Criteria; Metastatic Esophageal Adenocarcinoma; Proton Pump Inhibitors

Barrett's esophagus (BE) is a condition in which normal squamous mucosa lining the distal esophagus is replaced with metaplastic intestinal-type columnar epithelium.[1] The prevalence of BE among the general population in the United States is estimated at 5.6%, and occurs predominantly in white men aged >50 years.[2,3] BE is strongly associated with gastroesophageal reflux disease and with a considerably increased risk for development of esophageal adenocarcinoma (EAC), which is estimated to be at least 10 times more prevalent in people with BE than in the general population.[4,5] BE is the only known precursor to EAC, and it can progress from metaplastic to low-grade dysplasia (LGD), and from there to high-grade dysplasia (HGD) and ultimately to EAC.[6] Although the progression from BE to EAC is estimated to be <0.5%,[7,8] when EAC is diagnosed in symptomatic patients, the 5-year survival is <3%.[9] Early detection and treatment of BE is essential to halt its progression and impact the incidence of EAC, which has grown 6-fold in the last 30 years.[9] Guidelines generally recommend surveillance endoscopy in people with BE to detect and treat neoplasia and early signs of HGD in order to prevent the development of EAC.[1]

Recent technological advances in endoscopic imaging and treatment modalities have spurred greater interest in the detection and treatment of BE and its sequelae. There are also increased studies aimed at determining specific risk factors to guide physicians in screening and surveillance. As a result, the major gastrointestinal societies in the United States and the United Kingdom have issued updated guidelines recently.[1,10]

Although there is consensus on the importance of BE and the potential need for screening and surveillance, there are a variety of opinions on the specific means by which this should be accomplished. For example, in order to detect early neoplasia, neoplastic lesions can be small, difficult to visualize endoscopically, and might not be detected by random quadrant biopsies, making some investigators strong proponents of routine use of advanced imaging methods, such as chromoendoscopy or electronic chromoendoscopy; others disagree.[1] Similarly, there is little agreement on which landmarks and classification system should be consistently recorded during endoscopy in BE patients to demonstrate a high-quality

examination; whether medical treatment for BE should be aggressive and include high doses of proton pump inhibitors, statins, and/or aspirin; and whether symptom resolution alone should be the end point of treatment. The proper intervals for surveillance are also controversial, with a broad range of opinions and many recommendations supported by low-grade evidence at best. Furthermore, in this era of cost containment, BE represents a conundrum to the public, as it can lead to lethal consequences, but the economic and health care costs required to prevent death are formidable.[11]

Consequently, there is an important need to identify valid quality indicators for standardize high-quality care in BE by adherence to defined criteria. The Centers for Medicare and Medicaid Services and private payers will increasingly demand documentation of quality measures through participation in voluntary reporting programs, such as the Physician Quality Reporting System to receive payment incentives and at some point in the future reimbursement will likely be contingent on adherence to validated quality indicators, once they are defined.[12]

To address this need, the American Gastroenterological Association conducted a state-of-the art meeting of experts in BE. During the meeting, one of the goals was to establish a consensus on the description of the pathophysiology, management, and goals of treatment for patients with BE, and develop a set of candidate quality indicators and best practice advisors for gastroenterologists to follow and document.

Methods

Development of Candidate Quality Indicator Statements

In August 2013, a group of 25 international experts on BE were approached and agreed to serve as faculty for the consensus conference and to draft a set of potential quality indicator statements based on the medical literature. This was based on the domains of diagnosis/screening, surveillance, treatment and management of barrett's and early cancer. The approval of each statement was ultimately achieved through a series of electronic and in-person discussions using the modified Delphi method.[13–15] An initial group of core faculty members was created and agreed to draft these statements. Each faculty member was assigned 4 subfaculty members who approved or disapproved of each statement. Not all faculty members had access to the complete list of references during this process.

Voting on Candidate Quality Indicator Statements

All statements underwent vigorous edits throughout the entire process. Once vetted by the subfaculty, each statement was sent electronically to the entire group for a vote to determine whether or not the statement should be considered as a candidate quality indicator. Specifically, those statements that were approved by 80% of voters went on to a second round of discussion, after which participants voted on agreement of the actual meaning of the statement. For this part of the voting, each faculty had the following options for voting on the statements: (1) strong agree; (2) agree; (3) disagree; (4) strongly disagree, or (5) neither agree nor disagree. Statements not approved in the second round of voting were edited based on input from faculty and resubmitted for another round of voting. In August

2013, the group met for a face-to-face discussion of statements that still failed to meet with 80% approval (ie, agreement), despite 3 rounds of voting. During this final face-to-face meeting, after a prolonged discussion on the statements not yet meeting the predefined 80% acceptance, a final round of voting was conducted anonymously.

Grading of Recommendations Assessment, Development and Evaluation Methodology for the Quality Indicator Statements

The quality of evidence was rated using the Grading of Recommendations Assessment, Development and Evaluation criteria (high, moderate, low, or very low) using the approach developed by the Grading of Recommendations Assessment, Development and Evaluation working group established in 2000 (Tables 1–4).[16,17]

Results

The following statements were approved to serve as the basis for our consensus conference titled “Candidate Quality Indicators for the Diagnosis, Treatment and Management of Patients With BE.”

Screening, Diagnosis, and Staging

Statement 1: For patients in whom BE is being considered, the squamo-columnar junction, the gastroesophageal junction (GEJ), and the location of the diaphragmatic hiatus (if there is a hiatal hernia present) should be recorded on each upper endoscopy. *Agreement: 20 of 23 = 87% (35% strongly agree, 52% agree, 8.6% neither, 4.3% disagree. Grade of recommendation: weak. Quality of evidence: moderate*.

Discussion

These important landmarks help standardize effective documentation of the presence and extent of columnar-lined epithelium in relation to the GEJ and hiatal hernia during upper endoscopy. Detection of these landmarks has been found to have high inter- and intra-observer agreement.[18,19] Furthermore, the recognition of these landmarks is key if a diagnosis of BE is being considered. In the absence of documentation of these landmarks, the diagnosis of BE may be suspect, and a patient without BE might be given an incorrect diagnosis with subsequent economic, testing, and anxiety-producing sequelae. The best description of the endoscopic location of the GEJ, supported by an international Barrett’s working committee was “the proximal limit of linear gastric mucosal folds in routine diagnostic endoscopic practice.” “The proximal limit of gastric mucosal folds is defined best as the most proximal point at which there is any evidence of a linear fold of gastric mucosa which is best visualized when the esophagus is distended minimally to the point that the proximal ends of the gastric folds appear.”[18]

Statement 2: If BE is suspected on an endoscopy, the endoscopist should document the extent of suspected BE using Prague criteria. *Agreement: 19 of 23 = 82.6% (43% Strongly Agree, 39% Agree, 13% neither, 4.3% disagree. Grade of recommendation: weak. Quality of evidence: moderate*.

Discussion

The length of BE can be highly variable among patients and, in the absence of a standardized classification system, reporting can be subject to poor inter-observer agreement. In addition, BE length has been found to be an important factor in both the risk of progression and the number of sessions required to treat endoscopically. Traditional methods of measurement have only accounted for maximum BE length, which might not be an accurate indicator of total surface area, given the wide variation in squamo-columnar junction contour. Measurement of BE length using the Prague criteria, which takes into account both circumferential and maximal length to provide a C and M score has been found to have a high inter-observer agreement by both experts and medical trainees and by both Western and Asian endoscopists.[18] As a result, it is considered the preferred system for the measurement of BE extent.

Statement 3: The normal-appearing and normally located squamo-columnar junction should not be biopsied. *Agreement: 19 of 22 = 86.3% (68.1% strongly agree, 18.2% agree, 4.5% neither, 4.5% disagree, 4.5% strongly disagree). Grade of recommendation: strong. Quality of evidence: moderate*.

Discussion

When biopsies obtained from normally appearing and located squamo-columnar junction demonstrate intestinal metaplasia, it probably represents intestinal metaplasia of cardia, a different clinical entity from BE. Intestinal metaplasia of the cardia is associated with *Helicobacter pylori* infection and older age, while BE is associated with gastroesophageal reflux disease. The malignant potential of intestinal metaplasia of cardia is not entirely clear, but studies to date indicate that it has an extremely low risk of progression to cancer.[20–24]

Sharma et al[20] prospectively evaluated the risk of dysplasia in 177 patients with short segment Barrett's esophagus (SSBE) and cardia intestinal metaplasia (n = 76). Dysplasia prevalence was significantly higher in patients with SSBE compared with those with cardia intestinal metaplasia (11.3% vs 1.3%; $P = .0058$). When patients with SSBE (n = 78) and cardia intestinal metaplasia (n = 34) were followed for a mean of 31 months (range, 8 – 100 months) and 24 months (range, 6 – 80 months), respectively, 9 patients with SSBE developed dysplasia (7 LGD and 2 HGD), while only 1 patient with cardia intestinal metaplasia developed dysplasia. The time to dysplasia development was significantly longer in patients with cardia intestinal metaplasia ($P = .0077$ per log-rank test). While 1 patient with HGD in a patient with SSBE progressed to adenocarcinoma, LGD was not detected on repeat endoscopy in the patient with cardia intestinal metaplasia 1 year later.[20]

Similarly, in a population-based cohort study in 2011 by Jung et al,[24] 487 patients (401 with BE and 86 with intestinal metaplasia from normal or "irregularly"-appearing squamo-columnar junction) were identified in Minnesota and followed for a median interval of 7 years (BE) or 8 years (intestinal metaplasia at the GEJ). Of 355 patients in BE group with no prevalent HGD/EAC, in 12 months, 18 progressed to dysplasia (10 from no dysplasia to HGD, 6 from no dysplasia to HGD, and 2 from LGD to HGD). Of 55 (64%) patients with intestinal metaplasia at the GEJ who underwent at least 1 subsequent endoscopy, LGD that

was detected in 6 patients on first endoscopy was not found on subsequent endoscopies and none of these patients progressed to EAC.[24] Based on these findings, the experts agreed that this quality indicator will reduce the incorrect labeling of a patient with BE and subsequently reduce any future surveillance if contemplated.

Surveillance

Statement 4: If systematic surveillance biopsies performed in a patient known to have BE show no evidence of dysplasia, follow-up surveillance endoscopy should be recommended no sooner than 3 to 5 years. *Agreement: 21 of 23 = 91.3% (17.3% strongly agree, 74% agree, 8.6% neither). Grade of recommendation: weak. Quality of evidence: low*.

Discussion

Given the weak recommendation and low quality of evidence, this recommendation should be guided by additional discussion of the general risks and benefits of surveillance with the patient as there are no randomized controlled trials or other definitive data showing a survival advantage of surveillance endoscopy in BE patients. Nevertheless, several retrospective studies have shown that EAC was diagnosed at an earlier stage in BE patients enrolled in surveillance programs when compared with patients not surveyed.[25–28] However, the survival benefit for patients with EAC who have participated in surveillance is not clear yet due to the limitations of performing a similar prospective study.[26–29]

Nondysplastic Barrett's esophagus (NDBE) is known to progress to EAC at the rate of 0.12% – 0.59% per year based on evidence from several published studies.[4,30–32] In a prospective, multicenter outcomes project (n = 1204), the mean time of progression from NDBE to EAC was calculated at 5.29 years (SD 3.83 years; range, 1.05 – 15.3 years). A cost-effectiveness analysis showed that surveillance every 5 years was the only effective strategy for NDBE surveillance.[30] Experts agreed that, in accordance with current American Gastroenterological Association guidelines, in patients with known NDBE, follow-up surveillance endoscopy should be recommended every 3 to 5 years. However, there was also general discussion regarding limited data pertaining to the effectiveness of surveillance and much fewer data on appropriate surveillance interval. The aim of this measure is actually to reduce unnecessary and frequent endoscopy that is performed in patients with NDBE and to ensure appropriate discussion of risk and benefit with the patient.

It was also noted that current research is focusing on more clearly identifying factors in Barrett's patients that predict a higher likelihood of developing cancer; these patients therefore might benefit from a surveillance program. Data from these ongoing studies are not robust yet to propose a strong recommendation.

Statement 5: If a patient with known BE undergoes surveillance endoscopy, systematic biopsies should be taken from every 1 to 2 cm in 4 quadrants throughout the extent of the endoscopically involved segment. *Agreement: 22 of 23 = 95.7% (52.1% strongly agree, 43.4% agree, 4.3% neither). Grade of recommendation: strong. Quality of evidence: moderate*.

Discussion

Reliable demonstration of the presence of intestinal metaplasia and/or dysplasia from biopsy specimens of the distal esophagus in patients with BE is associated with significant sampling errors. The use of a systematic biopsy protocol, specifically 4-quadrant biopsies every 1 to 2 cm (ie, Seattle protocol), remains a necessary component of endoscopic surveillance of BE. In a retrospective study, Abrams et al[33] evaluated 2245 BE surveillance cases for adherence to biopsy guidelines. The odds of detecting dysplasia significantly decreased with nonadherence to a systematic biopsy protocol (odds ratio = 0.53; 95% confidence interval: 0.35 – 0.82). Theoretically, this also applies to detecting intestinal metaplasia in a field of non–goblet cell columnar epithelium. Notably, however, even complete adherence to the Seattle protocol[33] (4 quadrant biopsies every 2 cm) does not eliminate sampling errors, underscoring the limitations of histologic sampling of only a relatively small proportion of the visible columnar mucosa in the esophagus. This limitation underscores the need to continue to develop endoscopic surveillance techniques that can more comprehensively and expeditiously scan Barrett's mucosa for dysplasia without sole dependence on random biopsies.

Statement 6: If a patient with known BE undergoes surveillance endoscopy, biopsies from any visible raised or depressed lesions should be obtained and processed separately from the systematic biopsies. *Agreement: 22 of 23 = 95.7% (65.2% strongly agree, 30.4% agree, 4.3% neither). Grade of recommendation: strong. Quality of evidence: moderate*.

Discussion

Endoscopically visible lesions within the BE segment, such as nodules,[34] ulcers,[35] depressions, and areas of abnormal surface patterns, are more likely to harbor dysplasia and early neoplasia.[36–40] In addition, data on endoscopic mucosal resection of these lesions have revealed a substantial rate of disease upstaging. As a result, these areas need to be documented, biopsied, and processed in such a manner as to allow accurate matching of the pathology of the area, as well as future identification of its location in the event that endoscopic therapy and/or closer monitoring is required.

Treatment and Management of Barrett's Esophagus and Early Cancer

Statement 7: In patients with dysplastic BE or early EAC, a diagnostic endoscopic resection should be performed on any raised or suspicious areas. *Agreement: 22 of 23 = 95.6% (65.2% strongly agree, 30.4% agree, 4.3% neither). Grade of recommendation: strong. Quality of evidence: moderate*.

Discussion

Experts agreed that staging or diagnostic endoscopic mucosal resection (EMR) should be performed in patients with dysplastic BE or early EAC, as findings on the resection specimen may demonstrate an under- or overestimation of the degree of neoplasia compared with findings on biopsies, as well as endoscopic ultrasound evaluation in up to 20% – 30% of patients. This is based on evidence from several studies. In 2005, Larghi et al[41]

prospectively enrolled 48 consecutive patients with biopsy-proven HGD or T1m EAC with nodular lesions <2 cm to evaluate the utility of EMR as a staging tool compared with endoscopic ultrasound. Eight of 48 patients had submucosal cancer on endoscopic ultrasound and underwent esophagectomy. In the other 40 patients (HGD, n = 25; EAC, n = 15), EMR confirmed HGD in 19 of 25 patients, while the other 6 were found to have adenocarcinoma invading the lamina propria. In the other 15 patients found to have T1m EAC on biopsy specimens and endoscopic ultrasound, 6 were found to have submucosal invasion. In addition, it has been shown that submucosa and muscularis mucosa were present on histopathology in the majority of EMR specimens (99% vs 1.0% of biopsy specimens), which is critical to accurately staging BE-associated neoplasia.[42] Similarly, several other studies have shown the utility of EMR as a staging tool in dysplastic BE or early esophageal cancer.[36–40]

Statement 8: In patients with BE-associated neoplasia, the goal of endoscopic treatment should be complete eradication of the BE segment in addition to any dysplastic lesions. *Agreement: 23 of 23 = 100% (65.2% strongly agree, 34.8% agree). Grade of recommendation: strong. Quality of evidence: moderate*.

Discussion

Manner et al[43] enrolled 63 patients who underwent endoscopic mucosal resections to treat focal BE-associated HGD or intramucosal adenocarcinoma and randomized these patients to either surveillance (n = 30) or assigned them to undergo ablation of residual BE with argon plasma coagulation (APC) (n = 33). The follow-up duration was similar among patients in the APC (28.2 ± 13.7 months) and surveillance groups (24.7 ± 14.8 months; $P = .159$). However, patients in the APC group had a significantly lower number of secondary lesions (n = 1 [3%]) compared with those in the surveillance group (n = 11 [36.7%]) and, therefore, significantly higher recurrence-free survival in patients who underwent APC ablation of the residual BE ($P = .005$).[43] Similarly, other studies showed a high rate of metachronous lesions in the BE segment in patients treated with endoscopic eradication therapies if residual BE persists.[44] Based on the evidence from these studies, experts agreed that if the entire BE segment is not treated, the rate of cancer recurrence is high.

Overall Discussion: Candidate Quality Measures in Barrett's Esophagus and International Consensus

Diagnosis and treatment of BE remains a challenge. First, as larger populations of BE patients are studied, the incidence of EAC arising from BE appears to be lower than previously thought.[45] Second, neither clinical characteristics nor tissue markers reliably predict the development of cancer in these patients; we are, in effect, looking for a needle in a haystack. Third, cost-effectiveness analyses suggest that the number of BE patients needed to follow and treat to achieve a clear benefit is costly, beyond the usual standards of what is considered cost-effective.[46–48] Fourth, without better predictive factors of cancer risk, it would be difficult and extremely costly to perform a prospective study evaluating the effects of screening, surveillance, and treatment, given the numbers of patients needed to follow. As a result, it is more important than ever to use experts in the field to achieve consensus

utilizing data from small clinical trials and numerous observational studies regarding the essentials of BE management in the absence of large clinical trials. Finally, there are no published data on quality measure in BE patients.

The Delphi process is one in which a series of statements or questions are discussed by experts in several rounds.[13–15] After the first round, a leader summarizes the discussion without identifying the content of specific discussants. The experts are then asked to consider these points from colleagues and discuss and revise base questions and arrive at the best answer. Through a careful and thorough review of the literature and utilization of this approach, the selected committee of American Gastroenterological Association faculty and subfaculty were able to create a list of possible candidate quality indicators and clinical actions. Then, by a systematic process of evaluation, discussion, and vetting, the experts arrived at a consensus on the several statements described previously. These 8 measures discussed in detail can be considered as the basis for quality indicators and best practice advisors in the management of patients with BE, and serve as a template for physicians in documenting their quality of care for these patients. Conversely, several essential core questions had low-quality evidence or could not be agreed upon (table) and further data and/or discussion will be needed to provide answers. It should be noted, however, that a potential limitation of this method is that not all faculty had the complete list of references during this process.

The benefits of establishing such statements have further important implications in modern society. The Centers for Medicare and Medicaid Services are increasingly encouraging physicians to document quality measures by participating in voluntary reporting programs, such as the Physician Quality Reporting System, which provides incentives to physicians who report data on quality measures.[12] Failure to participate in these programs can result in annual payment cuts. Physician reimbursement rates will be increasingly based on outcome measures performance as determined by the Centers for Medicare and Medicaid Services. It is therefore imperative to develop meaningful quality indicators that will provide invaluable information to practicing clinicians to provide quality care.

In summary, these guidelines put forth a group of candidate quality indicators agreed upon by experts in the field using the Delphi process. It is hoped that these candidate quality indicators will provide a background on which to base current care of patients with suspected or documented BE. Just as importantly, this process identified several fundamental questions in this field on which we could not agree and which require more data.

Abbreviations used in this paper

APC	argon plasma coagulation
BE	Barrett’s esophagus
EAC	esophageal adenocarcinoma
EMR	endoscopic mucosal resection
GEJ	gastroesophageal junction

HGD	high-grade dysplasia
LGD	low-grade dysplasia
NDBE	nondysplastic Barrett's esophagus
SSBE	short segment Barrett's esophagus

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Table 1

Definitions of the Quality of Evidence[17]

Quality of evidence	Current definition	Previous definition
High	Very confident that the true effect lies close to the estimate of the effect	Further research is very unlikely to change our confidence in the estimate of effect
Moderate	Moderately confident in effect estimate. The true effect may be close to the estimate of effect but there is a possibility that it may be substantially different	Further research is likely to have an important impact on our confidence in the estimate
Low	Limited confidence in effect estimate. The true effect may be substantially different from the estimate of the effect	Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate
Very low	Very little confidence in effect estimate. True effect is likely to be substantially different from the estimate of effect	Any estimate of effect is very uncertain

Table 2

Grading the Quality of Evidence[16,17]

Type of evidence	Quality	Decrease grade if:	Increase grade if:
Randomized trial	High	Quality limitation	Effect size
Observational study	Low	Serious (−1)	Large (+1)
Any other study	Very low	Very serious (−2)	Very large (+2)
		Inconsistency	If evidence of a dose response (+1)
		Serious (−1)	Strength of association
		Very serious (−2)	Strong (RR >2 from 2 or more observational studies and no plausible confounding factors (+1)
		Indirectness	
		Serious (−1)	Very strong (RR >5 based on direct evidence and no confounding factors)
		Very serious (−2)	
		Imprecise or sparse data	
		Serious (−1)	
		Very serious (−2)	
		Publication bias	
		Serious (1)	
		Very serious (−2)	

RR, relative risk.

Table 3

Statements With ≥80% Consensus Agreement but Generally Low-Quality Evidence

If BE is suspected on an endoscopic screening examination, the endoscopist should obtain multiple systematic biopsies from the suspected segment. (Agreement 92%, strongly agree 57%, agree 35%, neither 4%, disagree 4%).
If a patient who is fit for endoscopy is diagnosed with BE as documented by the presence of intestinal metaplasia on histology of biopsies obtained from the tubular esophagus, enrollment in a surveillance endoscopy program should be strongly considered. (Agreement 92%, strongly agree 35%, agree 57%, neither 8%).
Patients undergoing surveillance biopsies for BE should be on an adequate dose of proton pump inhibitors to control reflux symptoms and erosive esophagitis. (Agreement 91%, strongly agree 61%, agree 30%, neither 9%).
In patients with BE undergoing endoscopic therapy, endoscopic resection of more than two-thirds of the circumference is not generally recommended due to the risk of stricture. (Agreement 83%, strongly agree 13%, agree 70%, neither 17%).
Radiofrequency ablation is an acceptable treatment option for BE patients with flat mucosa containing HGD without any visible lesions confirmed by high-resolution, high-definition endoscopy. (Agreement 87%, strongly agree 35%, agree 52%, neither 13%).
In patients who have completed endoscopic eradication of HGD and/or T1a EAC, follow-up endoscopic surveillance should be performed at 3, 6, 12, 18, and 24 months and yearly thereafter. (Agreement 87%, strongly agree 26%, agree 61%, neither 13%).
In patients who have completed endoscopic eradication of HGD and/or T1a EAC, endoscopic surveillance should include targeted biopsies of any visible lesions along with random biopsies of the neosquamous mucosa. (Agreement 96%, strongly agree 52%, agree 44%, neither 4%).
Patients with EAC and no distant metastases on radiologic evaluation should undergo staging evaluation with endoscopic ultrasonography at the time of diagnosis (Agreement 87%, strongly agree 26%, agree 61%, neither 13%).
In patients with severe dysphagia from metastatic EAC, insertion of a self-expanding metal stent is the treatment of choice for symptom palliation. (Agreement 87%, strongly agree 26%, agree 61%, neither 13%).

Table 4

Statements With <80% Consensus Agreement

Patients diagnosed with BE with without dysplasia should undergo a follow-up endoscopy within 1 year of first being diagnosed with BE to ensure the absence of prevalent dysplasia. (Agreement 72.0%, neither 34.8%, disagree 4.3%)
In patients with moderately or well-differentiated adenocarcinoma invading the mucosa without any lymph/vascular invasion, endoscopic resection is a valid alternative to surgery. (Agreement 73.9%, neither 21.7%, disagree 4.3%)
In patients with unresectable EAC complicated by esophageal stricture with esophagorespiratory fistulas, placement of a covered metal stent is mandatory. (Agreement 73.9%, neither 21.7%, disagree 4.3%)
If a patient presents with symptoms of heartburn or regurgitation that have been present for <5 years and has no alarm symptoms (dysphagia, weight loss, or anemia), then the patient should be treated medically without further diagnostic testing. (Agreement 60.9%, neither 8.7%, disagree 30.4%)
Patients with a family history (2 or more first-degree relatives with BE or EAC) should be considered for endoscopic screening regardless of whether or not they have a history of reflux symptoms. (Agreement 69.5%, neither 21.7%, disagree 8.7%)
In patients with BE, all cases of possible dysplasia (indefinite, low grade, high grade) should be reviewed by at least 2 additional pathologists with specific expertise in Barrett's pathology. (Agreement 60.8%, neither 8.7%, disagree 26.1%, strongly disagree 4.3%)
A patient with a columnar-lined distal esophagus without confirmed intestinal metaplasia on biopsy requires at least one follow-up endoscopy. (Agreement 65.2%, neither 26.1%, disagree 8.7%)
Patients who have BE should be treated with proton pump inhibitors whether or not they have gastroesophageal reflux disease symptoms or endoscopic signs of reflux esophagitis. (Agreement 73.9%, neither 8.7%, disagree 17.4%)