Barrett’s Esophagus: Biomarkers, Ablation, and Surveillance

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Evan S. Dellon, MD, MPH

Overview

• Diagnosis of Barrett’s esophagus
  – Where do we stand with screening?
  – Is there a role for biomarkers?
• Ablation
  – HGD, LGD, or for all?
  – How?
• Surveillance – who and when?

→ Discussion will focus on understanding new ACG guidelines

Thank you to Ryan Madanick and Nick Shaheen for use of slides
Why do we care about BE?

“Doc… I’m having some trouble swallowing…”

Barium Swallow
Upper Endoscopy

Adenocarcinoma – A Disease with a Rapidly Increasing Incidence

Not Much Progress Being Made…

Incidence

Mortality


New guidelines

ACG Clinical Guideline: Diagnosis and Management of Barrett’s Esophagus

- 45 evidence-based recommendations
- Covers full spectrum of BE management
Who should be screened?

Old guidelines
• The utility of screening is unclear
• Risk factors may help pick who should get scoped

New guidelines
• Screening for BE may be considered in men with chronic (>5 yrs) and/or frequent (weekly or more) GERD symptoms PLUS 2 or more of the following: age >50, Caucasian race, central obesity, tobacco, first degree relative with BE or cancer

Why not women?

Limitations of screening

Many of those developing cancer have no or trivial reflux symptoms

- Series of esophageal carcinoma demonstrate 20-51% of subjects have no or infrequent reflux symptoms
- Removal of those subjects from our endoscopy pool cuts the number of “findable” cancer by 40%.


Lead time bias

Barrett’s esophagus - Dx

1. BE should be diagnosed when there is extension of salmon-colored mucosa into the tubular esophagus extending ≥1 cm proximal to the gastroesophageal junction (GEJ) with biopsy confirmation of IM (strong recommendation, low level of evidence).
2. Endoscopic biopsy should not be performed in the presence of a normal Z line or a Z line with <1 cm of variability (strong recommendation, low level of evidence).

→ Don’t biopsy an “irregular z line”
→ Need ≥ 1cm

Consistent reporting of findings

Endoscopic classification (Prague)

Alternative terminology: TIM, MAX, CIRC, TGF
Is there a role for biomarkers?

No.

Dysplasia remains the main biomarker for BE and progression to EAC

BE causes cancer, right?

- nondysplastic BE → EAC ~ 0.3%/yr (~0.2 short seg)
- HGD → EAC ~ 7-20%/yr
- Most patients with BE die from a non-EAC cause
BE management

Old guidelines
- Low-Grade Dysplasia: Repeat endoscopy in 6 months, then annually
- High-Grade Dysplasia: Repeat every 3 months, or intervention with either esophagectomy or photodynamic therapy

New guidelines
- Confirm Diagnosis, then
  - Low-Grade Dysplasia: Radiofrequency Ablation
  - High-Grade Dysplasia: Radiofrequency Ablation
BE management

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If you do RFA, you must do EMR

El C et al. GIE, 2007
RFA for BE with Dysplasia


RFA – The AIM-D Trial

RCT of 127 Subjects with LGD & HGD

Intervention: RFA+PPI or Sham+PPI (2:1)

Follow-up: 12 mos

Assessment: Bx’s q3 mos (HGD)/ 6 mos (LGD)

1° Outcomes:

• Ablation of all dysplasia:
  – 81% of HGD
  – 91% of LGD
  – app 20% of controls

• Complete eradication of IM (77% of Rx, 2% Sham)

SE’s: Strictures in 6% of subjects

AIM-D: 3 year durability

Shaheen NJ et al, Gastroenterology 2011; 5 yrs data w/ persistent response – Wolf et al; DDW 2014

U.S. RFA Registry

Complete Eradication Outcomes - Most Recent Biopsy
Patients with at Least 1 Bx ≥ 12 months
Is LGD an Indication for Endoscopic Intervention?
The SURF study

RCT, n=140, surveillance EGD vs. ablation with RFA
- Primary outcome: occurrence of HGD/EAC

Phoa KN et al. JAMA 2014
Is Cryotherapy an Option?

98 subjects w/ HGD treated at 10 institutions
• 61 completed Rx, 27 ongoing
281 total procedures
• 4.0/pt
No perfs, no buried glands, no bleeds or chest pain requiring hospitalization
One progression to CA

% w/ Eradication

CR-HGD 97
CR-D 86
CR-IM 58

Shaheen NJ et al. Gastrointest Endosc, 2010

Surveillance of BE

Non-dysplastic
Post-ablation (CEIM)

Initial LGD
EGD q 3 mos x 2, then q 1 yr
EGD q 3 mos x 4, then q 6 mos x 2, then q 1 yr

Initial HGD
EGD q 6 mos x 2, then q 1 yr

Shaheen et al; AJG, 2016
Surveillance of BE – key points

13. Patients should only undergo surveillance after adequate counseling regarding risks and benefits of surveillance (strong recommendation, low level of evidence).

14. Surveillance should be performed with high-definition/high-resolution white light endoscopy (strong recommendation, low level of evidence).

16. Endoscopic surveillance should employ four-quadrant biopsies at 2 cm intervals in patients without dysplasia and 1 cm intervals in patients with prior dysplasia (strong recommendation, low level of evidence).

18. Biopsies should not be obtained in mucosal areas with endoscopic evidence of erosive esophagitis until after intensification of antireflux therapy to induce mucosal healing (strong recommendation, very low level of evidence).

43. Treatment of recurrent metaplasia and/or dysplasia should follow guidelines for the treatment of metaplasia/dysplasia in BE before ablation (strong recommendation, low level of evidence).

BE take home points

- Screening: men > 50; chronic/frequent GERD sx; Caucasian race, central obesity, tobacco, first degree relative with BE or cancer
- Diagnosis: at least 1 cm; C/M classification
  - Confirm LGD/HDG with expert pathology review
- Treatment: Ablate LGD/HDG
  - EMR if nodular
  - No role for ablation of non-dysplastic BE
- Surveillance based on initial pathology
Thanks!

"Mind you, only one doctor out of ten recommends it."