

Eosinophilic Esophagitis

“New kid on the block”

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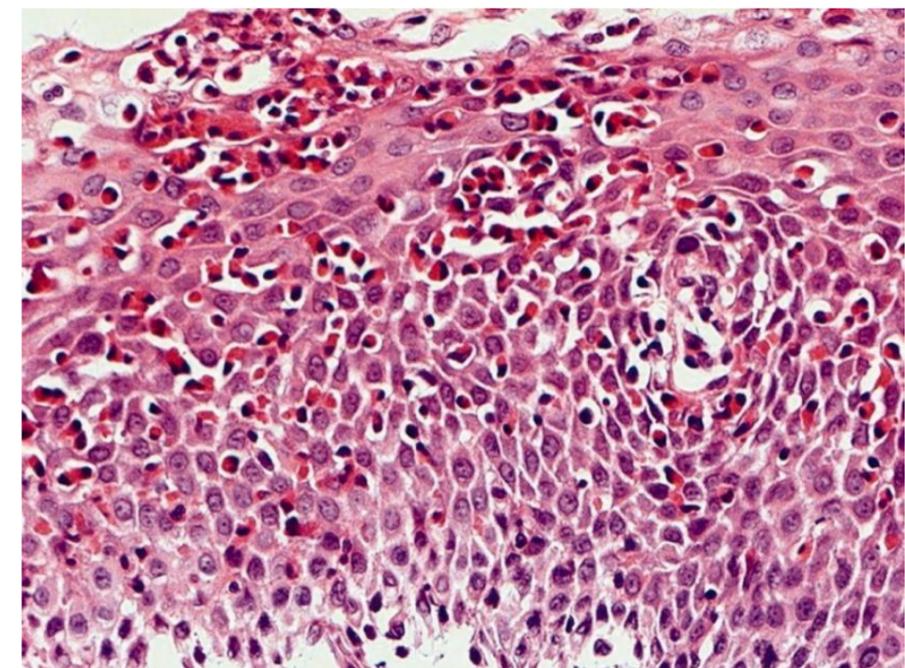
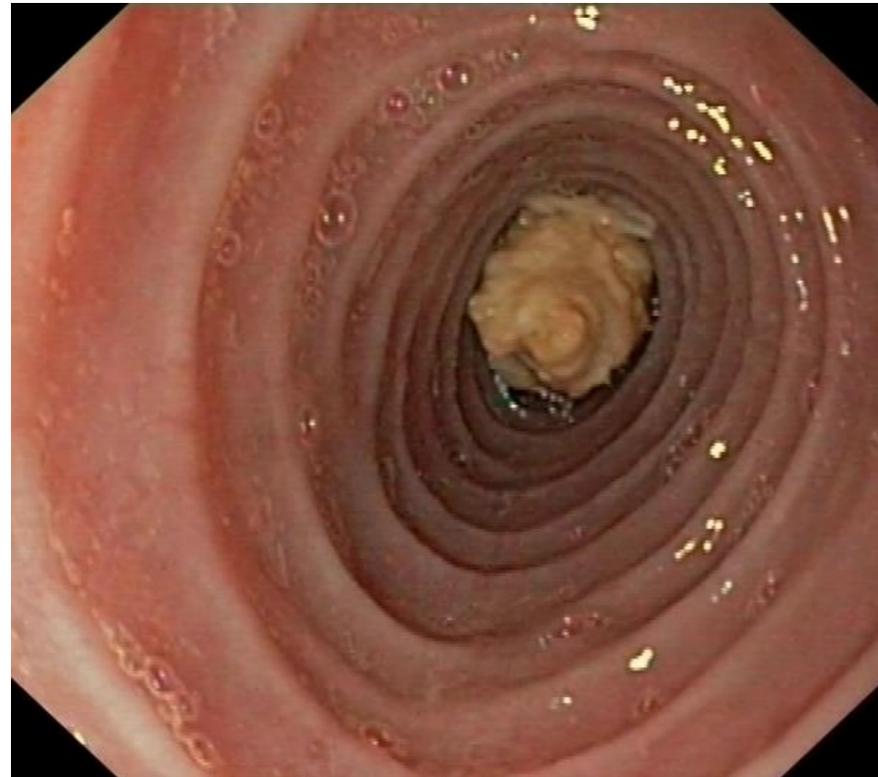


Eosinophilic Esophagitis Topics



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- History
- Incidence
- Symptoms
- Definition
- Diagnosis
- Therapy
- Natural history



Eosinophilic Esophagitis History



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- Attwood 1993 (*Dig Dis Sci* 1993; 38: 109-16)
 - 12 patients with dysphagia, no GERD (endoscopy/pH-testing)
 - Intra-epithelial eosinophils(>20 eos/hpf), squamous intra-epithelial hyperplasia
- Straumann 1994 (*Schweiz Med Wochenschr* 1994;124: 1419-29)
 - 10 patients with intra-epith. eos and dysphagia
 - Endoscopic abnormalities in the esophagus:
“white structures, partly finely reticular or plaque-like in 9/10 patients, one had a web and another a ring.”
- In the following years a discussion started on the overlap between EoE, GERD and an “intermediate” condition, PPI-REE

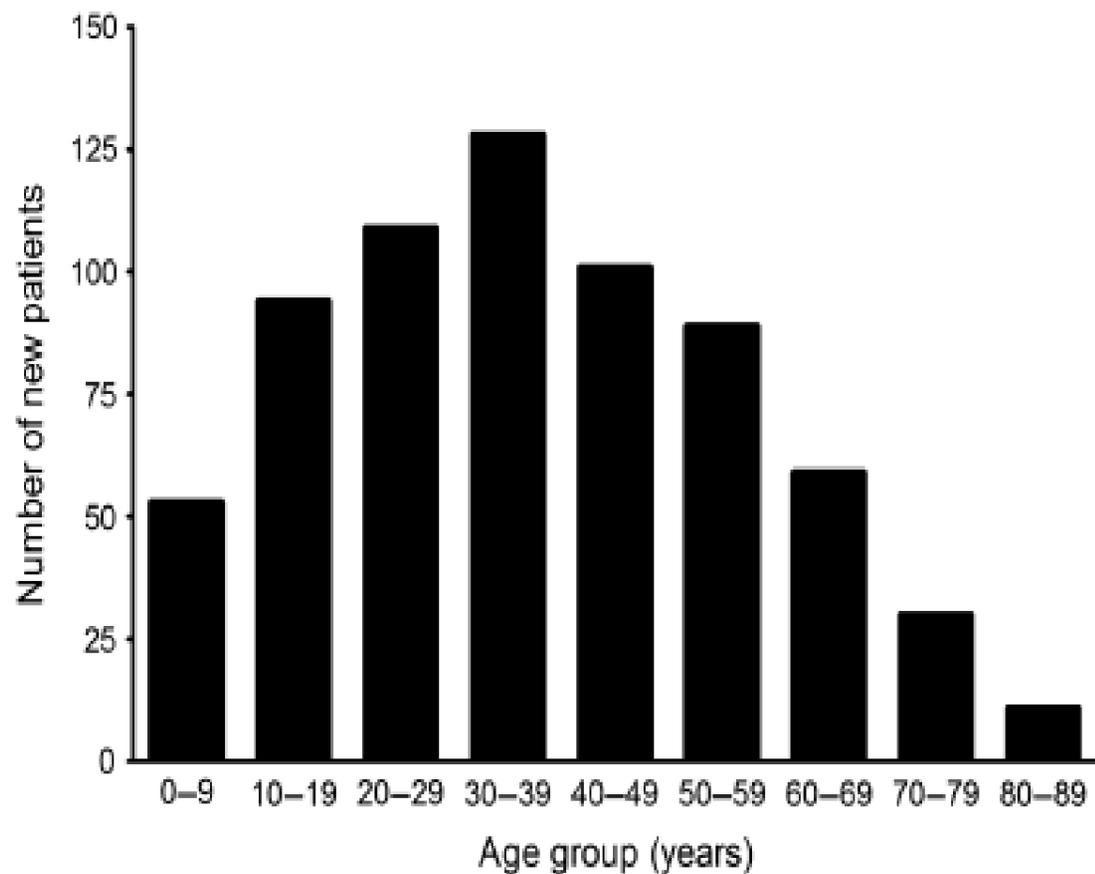


Eosinophilic Esophagitis Incidence

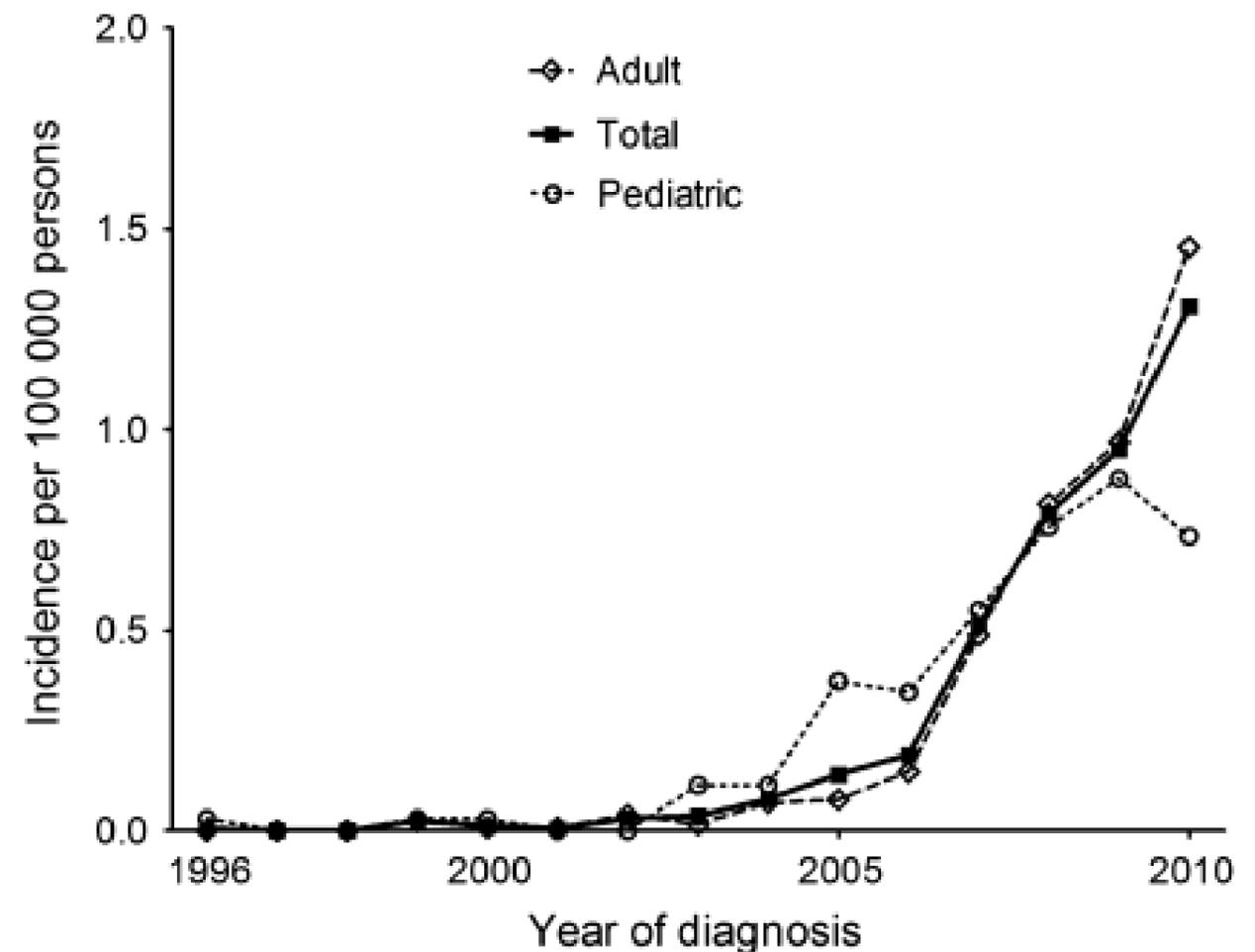


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- Netherlands
 - 674 pats (538 adults) with EoE identified in the PALGA database



EoE incidence highest in 20-29 yr old males (3.23/100,000 persons)



EoE incidence 1.31/100,000 persons in 2010

Eosinophilic Esophagitis

Symptoms



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- Dysphagia (80-90%)
- Food impaction (33-54%)
- Heartburn, chest pain, upper abdominal pain
- Atopy:
 - Rhino-conjunctivitis (57%)
 - Asthma (37%)
 - Food allergy (46%)
 - Atopic dermatitis



Esophageal Eosinophilia

Differential diagnosis



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- **GERD**
- Eosinophilic gastrointestinal diseases
- Hypereosinophilic syndrome
- Celiac disease
- Crohn's disease
- Infection (parasites)
- Achalasia
- Drug hypersensitivity
- Vasculitis
- Graft vs. host disease
- PPI use

Esophageal Eosinophilia

Overlap EoE with GERD



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Factors	EoE	GERD
Dominant symptom	Dysphagia	Heartburn Regurgitation
Food impaction	Common	Uncommon
Gender	>> Male	Male = female
Age	Children, young adults	Middle-age

Eosinophilic Esophagitis

Definition



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EoE is defined by:

- Symptoms related to **esophageal dysfunction**
- Eosinophil-predominant inflammation on esophageal biopsy, characteristically consisting of a peak value of **≥ 15 eosinophils per high-power field (eos/hpf)**
- Mucosal eosinophilia is isolated to the esophagus and persists after a **PPI trial**
- **Secondary causes** of esophageal eosinophilia excluded
- Response to treatment (dietary elimination, topical steroids) supports, but is not required for the diagnosis

Eosinophilic Esophagitis

Diagnosis



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1. Clinical characteristics

- Typical patient: atopic non-Hispanic white male (m:f ratio: 3:1) presenting in childhood or during the 3rd or 4th decade
- Symptoms: dysphagia, food bolus obstruction

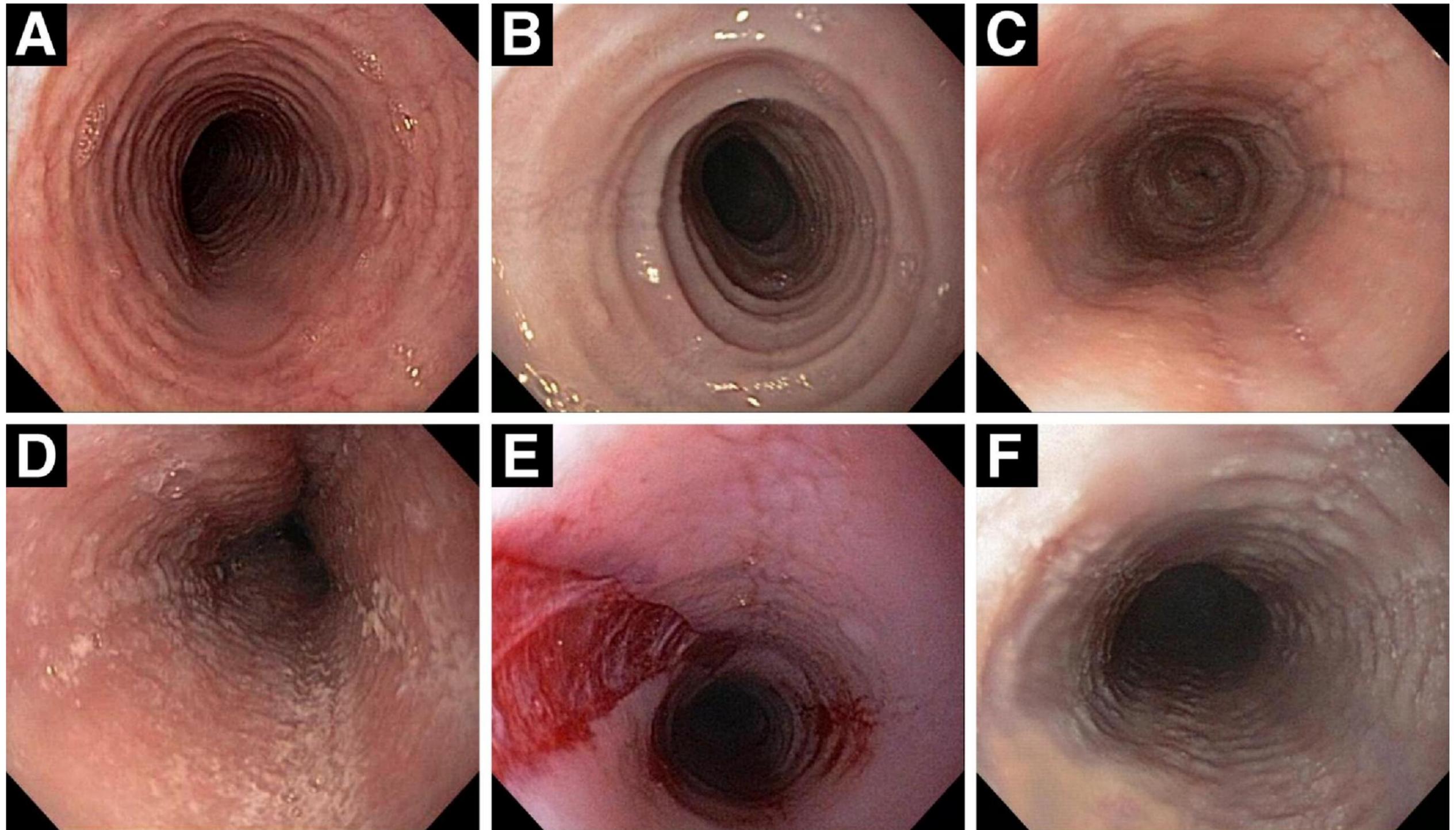
2. Endoscopy

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Endoscopic findings



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Eosinophilic Esophagitis

Endoscopic classification and grading



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Endoscopic assessment of the oesophageal features of eosinophilic oesophagitis: validation of a novel classification and grading system

Ikuo Hirano,¹ Nelson Moy,¹ Michael G Heckman,² Colleen S Thomas,² Nirmala Gonsalves,¹ Sami R Achem³

Gut 2013;**62**:489–495.

- Endoscopic videos from 25 EoE patients and controls reviewed by 21 gastroenterologists
- Proposed system included the grading of
 - 5 major features: **rings, furrows, exudates, edema, stricture**
 - 3 additional features: **narrow calibre esophagus, feline esophagus and crepe paper esophagus**

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Endoscopic classification and grading



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(Transient oesophageal rings (feline oesophagus))



Time 0

Time 1 (with insufflation)

Eosinophilic Esophagitis

Endoscopic classification and grading



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Endoscopic abnormality	N (%) of pairwise agreement (N = 5250)	κ (95% CI)
Fixed rings		
Raw score	2933 (56%)	0.40 (0.29 to 0.54)
Mild/moderate collapsed	3707 (71%)	0.50 (0.35 to 0.64)
Exudates		
Raw score	3396 (65%)	0.46 (0.33 to 0.58)
Mild/severe collapsed	4006 (76%)	0.51 (0.37 to 0.67)
Furrows		
Raw score	3198 (61%)	0.38 (0.28 to 0.50)
Mild/severe collapsed	4216 (80%)	0.54 (0.37 to 0.70)
Oedema		
Raw score	2682 (51%)	0.23 (0.13 to 0.35)
Mild/severe collapsed	4278 (81%)	0.43 (0.19 to 0.59)
Stricture	4168 (79%)	0.52 (0.36 to 0.68)
Feline oesophagus	3578 (68%)	0.15 (0.03 to 0.33)
Narrow calibre oesophagus	3896 (74%)	0.30 (0.20 to 0.41)
Crepe paper oesophagus	4852 (92%)	0.58 (0.05 to 0.77)

Eosinophilic Esophagitis

Diagnosis



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1. Clinical characteristics
 - Typical patient: atopic non-Hispanic white male (m:f ratio: 3:1) presenting in childhood or during the 3rd or 4th decade
 - Symptoms: dysphagia, food bolus obstruction
2. Endoscopy
 - Endoscopic EREFS Score system
3. Esophageal biopsies
 - 2-4 biopsies taken from prox. and dist. esophagus (≥ 15 eos/hpf)
 - Additional biopsies from antrum and duodenum in pats. with gastric or small intestinal symptoms

Eosinophilic Esophagitis

Diagnosis



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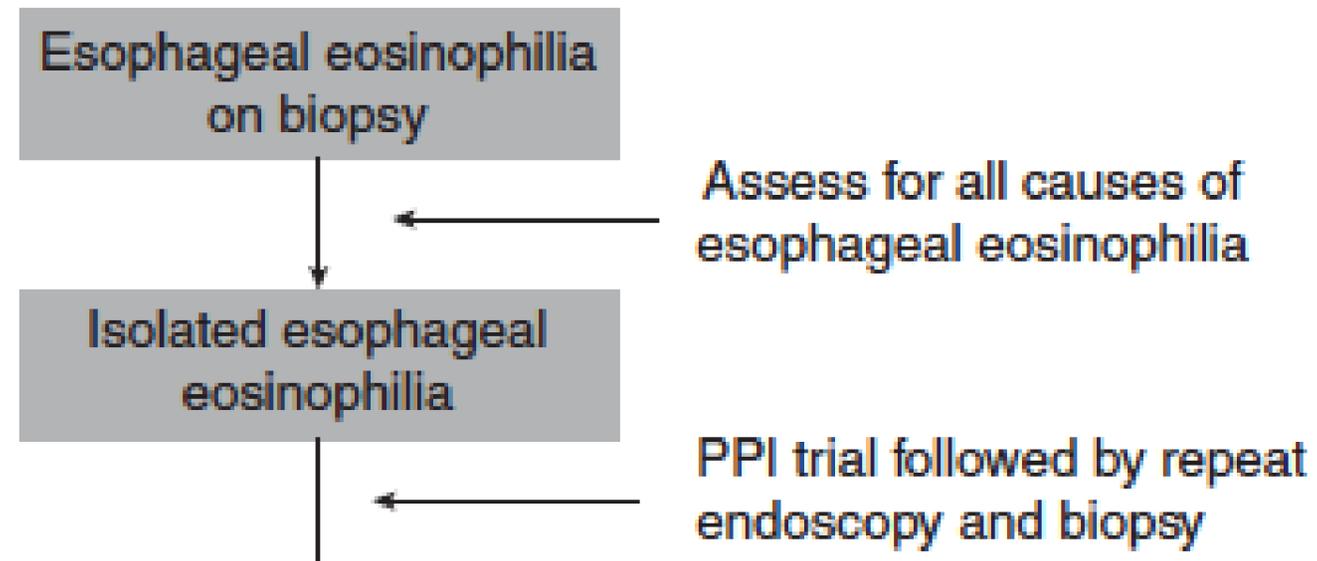
4. Diagnostic challenge
 - 2-months course of PPIs followed by endoscopy + biopsies to exclude PPI-Responsive Esophageal Eosinophilia (PPI-REE)
 - Symptomatic and histologic response to PPIs (30-50%)
 - PPI-REE does not establish a diagnosis of GERD!!!

Eosinophilic Esophagitis

Diagnostic algorithm



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Eosinophilic Esophagitis Treatment



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1) Pharmacologic treatment

- Topical steroids:

- Fluticasone propionate 500 µg BID
- Budesonide 1 mg BID (viscous formulation)

➔ Initial duration of treatment with topical steroids: 8 wks.

➔ Avoid eating or drinking for 30-60 min. after intake

➔ Candida esophagitis in 5-30% of pats.

- Systemic prednisone if topical steroids not effective or if rapid improvement of symptoms is required

- Alternatively: longer course or higher dose of topical steroids

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- 2) Dietary treatment
 - a) **Total elimination** of all food allergens with elemental or amino-acid based formula
 - b) **Targeted elimination diet** guided by allergy testing, typically skin prick testing or patch testing
 - c) **Empiric six-food elimination diet** removing 6 most common known foods: soy, egg, milk, wheat, nuts, and seafood
- Drawback total elimination diet: elemental diets costly (feeding tubes) and impact QoL
- Empiric diet: resolution in 74% of pats.
- Wheat (60%) and milk (50%) most common triggers

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- 3) Endoscopic treatment
 - Dilation for focal strictures and narrow-caliber esophagus
 - Dilation should be combined with medical or dietary treatment
 - Dilation technique
 - Method of dilation: balloon or bougie dilation?

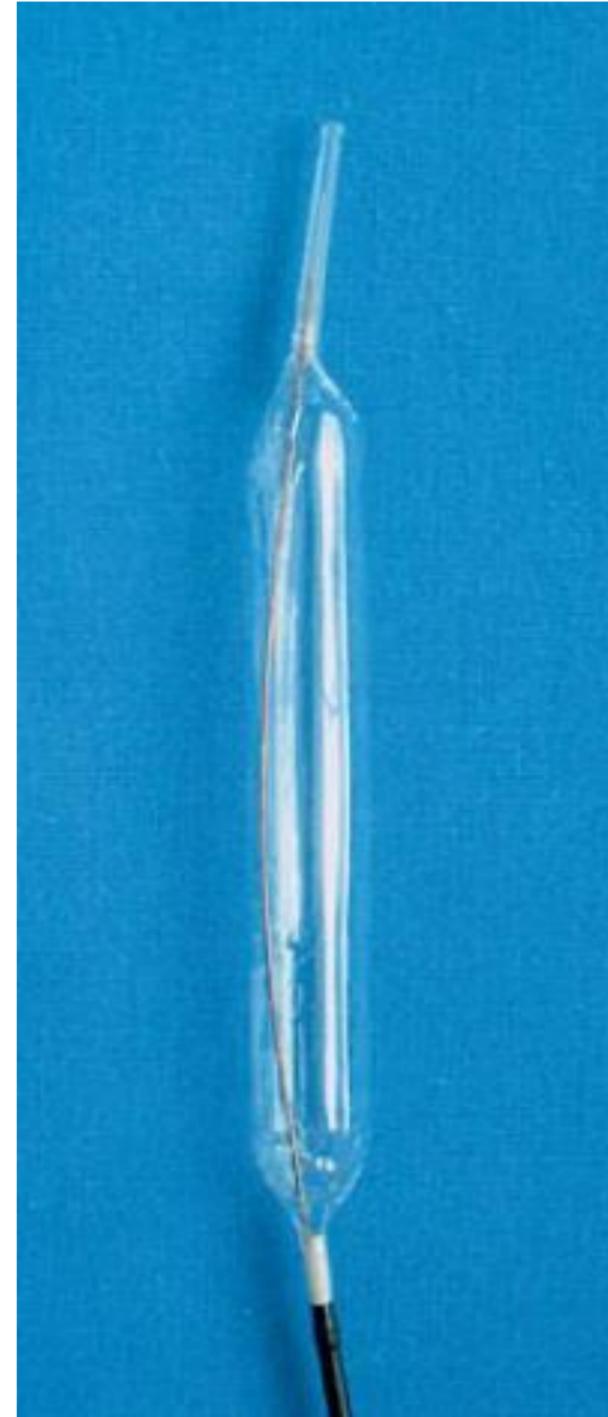
Dilation



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radial + longitudinal force



radial force

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3) Endoscopic treatment

- Dilation for focal strictures and narrow-caliber esophagus
- Dilation should be combined with medical or dietary treatment
- Dilation technique
 - Method of dilation: bougie dilation (??)
 - Start dilation at a diameter slightly larger than size of endoscope
 - Maximum progression in diameter: max. 3 mm
 - Ultimate target of dilation 16-18 mm
- Complications: post-procedural chest pain (75%), perforation (0.3%) and bleeding (1%)

Eosinophilic Esophagitis

National history



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- EoE is a **chronic disease**, with no evidence for progression to hypereosinophilic syndrome or malignancy
- A subgroup of patients may progress from an inflammatory to a **fibrotic process** (optimize medical treatment!)
- **EoE recurs** almost always after withdrawal of treatment (limited studies)
- **Maintenance treatment** should be considered:
 - Topic steroids and/or dietary restrictions
 - Intermittent esophageal dilation (“on demand”)

Eosinophilic Esophagitis

Conclusions



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- **GERD, PPI-REE and EoE** are the three most common conditions when esophageal eosinophilia is detected
- A **PPI trial** is important for distinguishing EoE from PPI-REE
- The first-line treatment of EoE includes **swallowed topical steroids or dietary elimination**
- **Endoscopic dilation** is an effective treatment for strictures and narrow-caliber esophagus in EoE
- **Maintenance treatment** (medication, diet, dilation) indicated in EoE patients