

Thresholds for Endoscopic Severity in Pediatric EoE

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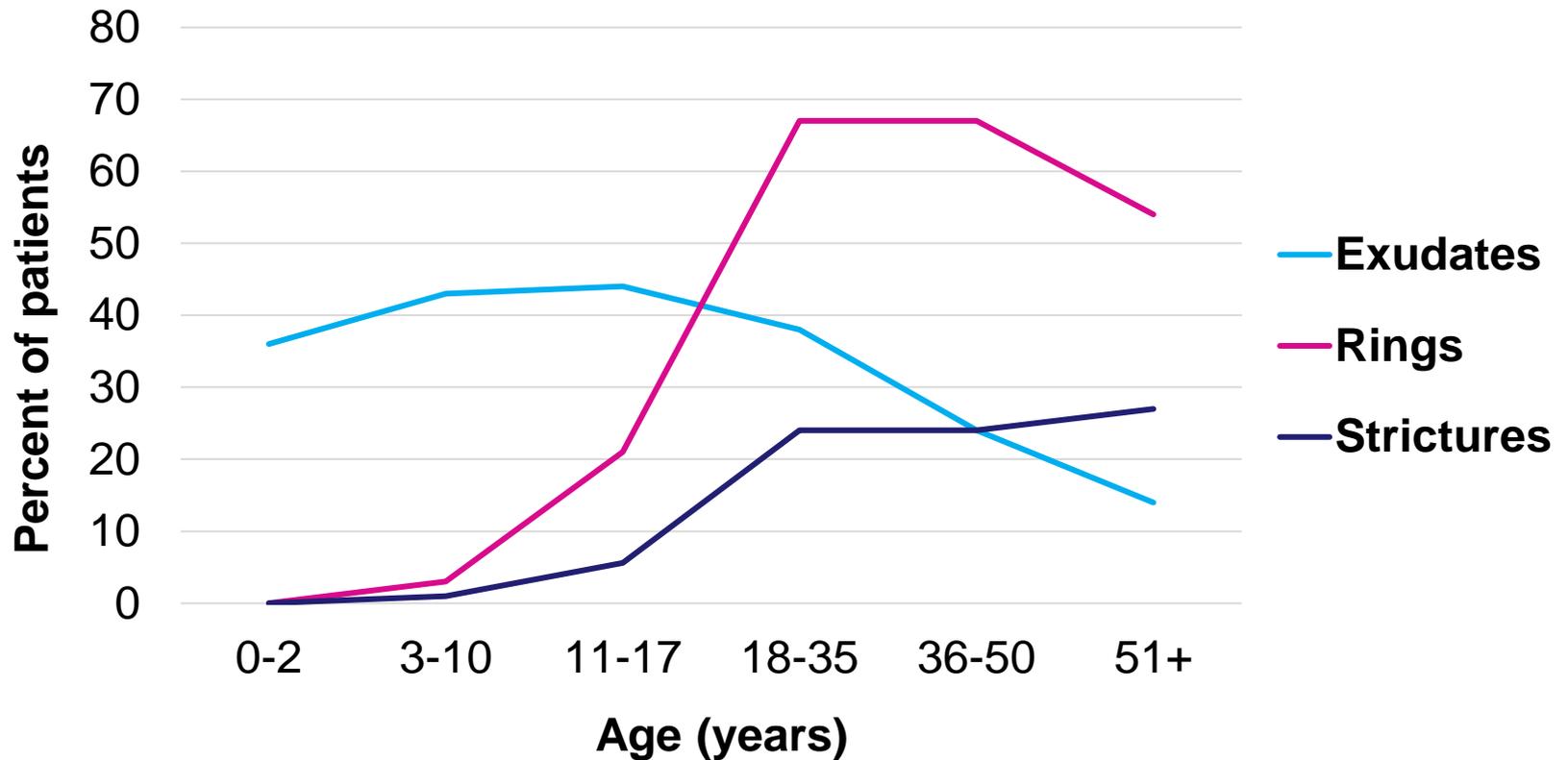


Question

What does the literature/clinical experience support for thresholds of endoscopic severity in children and adolescents?

EoE: Fibrostenotic features increase with increasing age

Retrospective, multicenter, cross-sectional analysis of 793 patients with EoE



This was found to parallel an increase in dysphagia and food impactions with age

Pediatric EoE: Endoscopic features are mostly inflammatory

Prevalence of endoscopic findings in pediatric patients with EoE

Pediatric study*	Normal	Inflammatory features (%)			Fibrostenotic features (%)	
		Edema	Exudates	Furrows	Rings	Stricture
Liacouras 2005 (n = 381)	32	NR	15	41	12	NR
Lai 2009 (n = 40)	5	40	10	55	20	3
Eroglu 2009 (n = 20)	NR	NR	50	25	25	NR
Hasosah 2011 (n = 15)	13	NR	33	NR	46	13
Al Subu 2012 (n = 271)	12	NR	24	75	11	9
Kim 2012 (n = 1015)	21	58	36	46	11	8
Ferreira 2012 (n = 29)	24	NR	41	48	7	NR
Kagalwalla 2017 (n = 78)	NR	71	54	74	12	1
Wechsler 2018 (n=77)	10	80	55	84	30	0

*Studies with >10 patients; NR = not reported

Bolton et al, Current Gastroenterology Reports 2018
Wechsler et al, Clinical Gastroenterol Hepatol 2018

Pediatric EoE: Endoscopic assessment

- ▶ **EREFs not commonly reported in pediatric studies**

- ▶ **Gold standard for endoscopic severity assessment suboptimal**
 - No studies correlating endoscopic severity with clinical outcomes
 - Studies exist correlating endoscopic severity with histological severity
 - Peak esophageal eosinophil count
 - EoEHSS

EoE: Thresholds for endoscopic severity may vary with age

▶ Endoscopic features in children are mostly inflammatory

→ *It is possible that EREFS scores are lower in children with EoE vs. adults*

▶ Younger children have lower scores than older children

Mean EREFS 1.3 in children ≤ 10 y.o. vs. 2.7 in children > 10 y.o. [1]

→ *EREFS response to therapy may be less pronounced in younger children*

▶ Normal looking mucosa is more prevalent in children

– Young age: one of the predictors of a normal looking esophagus [2]

– 40% of EGDs in children ≤ 10 y.o. vs. 10% of EGDs in children > 10 y.o. [1]

→ *EREFS severity can be absent in younger children*

[1] Ahuja et al, *J Pediatr Gastroenterol Nutr* 2020

[2] Eluri et al, *Endoscopy* 2020

Pediatric EoE: Potential features of ↑ endoscopic severity

▣ Rings

- Less amenable to reversibility with therapy than inflammatory features [1,2]
→ *Presence of rings: severe EoE*

▣ Furrows and exudates

- Strongest predictors of esophageal eosinophilia [3]
→ *More severe furrows and more extensive exudates: more severe EoE*

▣ Area of involvement of the esophagus

- EREFS score correlated with esophageal eosinophilia in 3 separate areas of the esophagus [3]
- Distal/proximal vs. both?
→ *Extensive esophageal involvement: severe EoE*

[1] Kagalwalla et al, *Clinical Gastroenterol Hepatol* 2017

[2] Fable et al, *J Pediatr Gastroenterol Nutr* 2018

[3] Wechsler et al, *Clinical Gastroenterol Hepatol* 2018

Pediatric endoscopic severity using EREFS: Points to consider

▣ EREFS: Differences in children versus adults

- Score mostly driven by inflammatory features
- Score increases with increasing age, in addition to the duration of symptoms
- Score can be as low as zero in children with active EoE

▣ EREFS as tool to assess endoscopic severity in children

- *Total score*
 - *May be lower in general? → EREFS responsiveness?*
- *Separate inflammatory and fibrostenotic scores*
 - *Will address the predominant inflammatory features in children*
- *Separate scores for distal and proximal esophagus*
 - *Needs to be studied, both in children and adults*