Abstract IDDF2021-ABS-0057 Figure 2

Abstract IDDF2021-ABS-0057 Figure 3

Abstract IDDF2021-ABS-0057 Figure 4

Abstract IDDF2021-ABS-0057 Figure 5

Results A total of 16 studies including 467 children (254-boys, 13.4 ± 3.6 y) were included in the review. Sub-types of achalasia in nine studies ($n=337$) included type I (30.6%), II (63.8%) and III (5.6%). Prior treatment was recorded in 105 (24.4%) cases. Pooled rates of technical and clinical success were 97.1% (95% CI 94.7%-98.4%) and 94.2% (95% CI 91.5%-96.1%), respectively (IDDF2021-ABS-0057 Figure 1. Forest plot demonstrating clinical success). There was a

significant reduction in mean Eckardt score: OR 6.8 (95% CI 6.29-7.25; $p < 0.001$), lower esophageal sphincter pressures (LESP): OR 19.51 (95% CI 17.63-21.40; $p < 0.001$) and integrated relaxation pressures: OR 19.44 (95% CI 13.33-25.55; $p < 0.001$) after POEM (IDDF2021-ABS-0057 Figure 2. Forest plot demonstrating the effect of POEM on mean Eckardt scores; IDDF2021-ABS-0057 Figure 3. Forest plot demonstrating the effect of POEM on mean LESP). Pooled rate of overall adverse events was 18.4% (95% CI 11.1%-28.8%; $I^2 73$), mucosal injury 7.5% (95% CI 4.2% - 12.8%; $I^2 27$) and insufflation related events 11% (95% CI 5.3%-21.7%; $I^2 75$) (IDDF2021-ABS-0057 Figure 4. Forest plot demonstrating adverse events associated with POEM). Reflux esophagitis and symptomatic GER were evident in 22.6% (95% CI 15%-32.5%; $I^2 52$) and was 13.6% (95% CI 10.4%-17.7%; $I^2 20$), respectively (IDDF2021-ABS-0057 Figure 5. Forest plot demonstrating reflux esophagitis after POEM).

Conclusions POEM is an effective procedure in pediatric achalasia. Future studies are required to determine the durability of response and GER after POEM.

IDDF2021-ABS-0058 OUTCOMES OF POEM IN ACHALASIA AND NON-ACHALASIA MOTILITY DISORDERS BEYOND FIVE-YEARS: A LARGE, SINGLE CENTRE STUDY

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Background Per-oral endoscopic myotomy (POEM) is an established modality of treatment in achalasia. However, there is limited data on the long-term outcomes of POEM. In this study, we aim to evaluate the efficacy of POEM in patients with a minimum follow-up of five years.

Methods The data of patients who underwent POEM and completed at least five-years follow-up were analyzed,

retrospectively. The primary outcome of the study was a clinical success (Eckardt $\leq$ 3) at $\geq$ 5-years after POEM. The secondary outcomes included the prevalence of dysphagia and symptoms of gastroesophageal reflux disease (GERD). Multivariate analysis was performed to analyze the predictors of dysphagia and symptomatic GERD on long-term follow-up.

Abstract IDDF2021-ABS-0058 Figure 1

Results 319 patients (males 182, mean age 40.5 ± 14.2 years) completed a median of 73 (60-89) months follow-up. The spectrum of motility disorders included idiopathic achalasia (type I 26.6%, type II 60.8%, type III 5.6%) and Jackhammer esophagus or distal esophageal spasm (2.8%). POEM was technically successful in 307 (96.2%) patients. The data for long-term follow-up was available in 283 (88.7%) patients. The overall long-term success was 92.6%, 92.1%

Abstract IDDF2021-ABS-0058 Figure 2

Abstract IDDF2021-ABS-0058 Table 1 Comparison of patients with and without dysphagia of any severity at 5 years follow up after POEM

	Dysphagia at 5-y (N=114)	No dysphagia at 5-y (N=156)	P value ⁺	Adjusted odd's ratio (95% CI)	P value [§]
Female, n (%)	51 (44.7)	70 (44.9)	0.983	0.967 (0.575-1.625)	0.898
Age, y	38.0 (14.3)	41.8 (14.3)	0.032	0.981 (0.964-0.999)	0.037
Prior therapy*, n (%)	50 (43.8)	73 (46.8)	0.632	0.954 (0.566-1.608)	0.859
Type of achalasia, n (%)			0.239	0.555 (0.213-1.445)	0.275
Type I	26 (22.8)	50 (32.1)			
Type II	76 (66.7)	93 (59.6)			
Type III/JH/DES	12 (10.5)	13 (8.3)			
Baseline Eckardt score	7.1 (1.6)	6.9 (1.6)	0.395	1.065 (0.911-1.245)	0.430
Baseline resting LESP, mmHg	36.9 (13.9)	36.6 (14.5)	0.844	1.001 (0.983-1.019)	0.947
Myotomy orientation, n (%)			0.488	0.715 (0.351-1.4566)	0.355
Anterior	96 (84.2)	136 (86.4)			
Posterior	18 (15.8)	20 (12.8)			
Myotomy length, cm (sd)					
Esophageal	9.4 (2.3)	9.5 (2.5)	0.781	0.992 (0.890-1.105)	0.881
Gastric	3.1 (0.6)	3.2 (0.6)	0.521	0.860 (0.567-1.305)	0.478
Resting LESP at 3mo.	12.3 (4.0)	12.8 (5.4)	0.340	1.003 (0.945-1.064)	0.933

Continuous data expressed as mean (SD); JH, Jackhammer esophagus; DES, Distal esophageal spasm; LESP, lower esophageal sphincter pressure; *pneumatic balloon dilatation, Botox injection, prior endoscopic or surgical myotomy; +univariate analysis; §multivariate analysis

Abstract IDDF2021-ABS-0058 Table 2 Comparison of patients with and without clinical GERD at 5 years follow up after POEM

	Clinical GERD at 5-y (N=78)	No clinical GERD at 5-y (N=192)	P value ⁺	Adjusted odd's ratio (95% CI)	P value [§]
Female, n (%)	44 (56.4)	77 (40.1)	0.015	0.531 (0.305-0.924)	0.025
Age, y	40.2 (13.6)	40.2 (14.7)	0.974	1.000 (0.981-1.019)	0.964
Prior therapy*, n (%)	37 (47.4)	86 (44.8)	0.693	0.858 (0.487-1.512)	0.595
Type of achalasia, n (%)			0.215	1.105 (0.577-2.118)	0.763
Type I	25 (32.1)	51 (26.6)			
Type II	43 (55.1)	126 (65.6)			
Type III/JH/DES	10 (12.8)	15 (7.8)			
Myotomy orientation, n (%)			0.250	1.684 (0.720-3.939)	0.229
Anterior	70 (89.7)	162 (84.4)			
Posterior	8 (10.3)	30 (15.6)			
Myotomy length, cm					
Esophagus	9.2 (2.4)	9.5 (2.5)	0.370	0.961 (0.855-1.081)	0.508
Gastric	3.1 (0.7)	3.2 (0.6)	0.753	0.902 (0.574-1.416)	0.654
Resting LESP at 3mo.	13.1 (5.3)	12.4 (4.6)	0.302	1.031 (0.976-1.088)	0.272

Continuous data expressed as mean (SD); JHE, Jackhammer esophagus; DES, Distal esophageal spasm; LESP, lower esophageal sphincter pressure; GERD, gastroesophageal reflux disease; *pneumatic balloon dilatation, Botox injection, prior endoscopic or surgical myotomy; +univariate analysis; §multivariate analysis

(type I), 94.7% (type II), 87.5% (type III) and 75% (Jackhammer esophagus/distal esophageal spasm) (IDDF2021-ABS-0058 Figure 1. Clinical response to POEM at 5-years follow-up on intention to treat and per-protocol population) (IDDF2021-ABS-0058 Figure 2. Change in mean Eckardt score at 1- and 5-years after POEM compared to baseline). Young age was an independent risk factor for the development of dysphagia on follow-up ($p=0.037$) (IDDF2021-ABS-0058 Table 1). Clinical GERD was detected in 28.6% of patients. On multivariate analysis, female sex was an independent predictor of symptomatic GERD after POEM ($p=0.025$) (IDDF2021-ABS-0058 Table 2).

Conclusions POEM is an effective and durable treatment modality for achalasia and other non-achalasia spastic motility disorders. Young patients and females may be at higher risk for recurrent dysphagia and GERD, respectively.

IDDF2021-ABS-0059

SHORT VERSUS LONG ESOPHAGEAL MYOTOMY DURING PER-ORAL ENDOSCOPIC MYOTOMY (POEM): A SYSTEMATIC REVIEW AND META-ANALYSIS OF COMPARATIVE TRIALS

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Background Per-oral endoscopic myotomy (POEM) is an established modality of treatment for achalasia cardia. Considerable variations exist in the technique of POEM with respect to the length and orientation of the myotomy. In this systematic

review and meta-analysis, we compared the outcomes of short versus long myotomy during POEM.

Methods We searched multiple databases from Jan 2010 to March 2021 to identify studies reporting on POEM. We selected studies that reported on comparative outcomes of POEM using short versus long myotomy. We performed a comparative analysis of clinical success, procedural duration, gastroesophageal reflux disease (GERD), and adverse events with short and long myotomy in POEM by meta-analysis.

Results 521 patients from five studies in which 241 patients treated with short and 280 with long myotomy approaches were analyzed. Pooled rate for clinical success gave an odds ratio (OR) of 1.27 (95% confidence interval [CI] 0.50- 3.26; $I^2 = 0$; $P = 0.62$); for hospital stay OR 0.22 (95%CI -0.03-0.46; $I^2 = 0$; $p=0.08$); for erosive esophagitis was OR 0.58 (95%CI 0.31 – 1.07; $I^2 = 0$; $P = 0.08$), and for adverse events was OR 0.67 (95%CI 0.29 – 1.53; $I^2 = 51$; $P = 0.34$) (IDDF2021-ABS-0059 Figure 1. Forest plot showing the comparison of clinical success in short versus long myotomy groups) (IDDF2021-ABS-0059 Figure 2. Forest plot showing the comparison of post POEM lower esophageal sphincter pressures in short versus long myotomy groups). Abnormal esophageal acid exposure was less frequent OR 0.45 (95% CI 0.22-0.90; $p=0.02$; $I^2 = 0$) (IDDF2021-ABS-0059 Figure 3. Forest plot showing the comparison of post POEM erosive esophagitis in short versus long myotomy groups) and the procedure duration was significantly shorter in the short myotomy group OR -0.76 (95%CI -1.00 to -0.52; $I^2 = 43$; $P = 0.001$) (IDDF2021-ABS-0059 Figure 4. Forest plot showing the comparison of procedure duration in short versus long myotomy groups).

Conclusions Short and long myotomy in POEM are comparable to each other in terms of clinical success and adverse

Abstract IDDF2021-ABS-0059 Figure 1

Abstract IDDF2021-ABS-0059 Figure 2

Abstract IDDF2021-ABS-0059 Figure 3