# SEVERITY OF DYSPHAGIA PREDICTS PATIENTS WITH **OBSTRUCTIVE LES PHYSIOLOGY** Goebel A, Kline M, Duncan D, Godiers M, Jain, A

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# Introduction

- Restrictive function of the lower esophageal sphincter (LES) is the hallmark of achalasia and esophagogastric junction outflow obstruction (EGJOO). These are the most functionally relevant disorders of esophageal motility.
- Manometric findings on High-resolution manometry (HRM) are interpreted using the Chicago classification (CC) which can subsequently be used to facilitate esophageal motility diagnosis.
- We aimed to determine whether the pattern and / or severity of dysphagia reported on The Brief Esophageal Dysphagia Questionnaire (BEDQ) can identify patients with obstructive physiology of the lower esophageal sphincter.

# Methods

- Data from undergoing high-resolution manometry (HRM) according to Chicago Classification (CC) version 4.0 at a tertiary care center were retrospectively analyzed per IRB approved protocol.
- Values were assigned to each answer of how often symptoms occurred on the BEDQ (rarely never=0, once or twice a month=1, 1-2 times per week=2, 3-5 times per week =3, almost daily/daily=4, several times a day=5). All patients with a BEDQ score of 4 or more were included in the cohort analysis group.
- The Brief Esophageal Dysphagia Questionnaire (BEDQ) score items were used to construct 3 unbiased latent classes based on items 1-8 from the BEDQ.
- Latent classes were compared for CC 4.0 diagnosis, functional metrics on High Resolution Manometry (HRM), and quantitative metrics.

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# Results





#### Table 1. CC, HRM, and quantitative analysis by latent class.

	LC 1 (n=51)	LC 2 (n=56)	LC 3 (n=40)	P value
Age [mean (SD)]	[60.9 (16.2)]	[59.1(15.71)]	[52(17.26)]	0.029
% female [number (%)]	[33(64.7%)]	[39(69.7%)]	[26(65.0%)]	0.835
BEDQ score [mean (SD)]	[9.8 (4.9)]	[17.4 (7.3)]	[30.4 (7.4)]	0.000
CC diagnosis [number (%)]				
Normal	[22(43.1%)]	[24 (42.9%)]	[18 (45.0%)]	0.975
EGJOO	[9(17.6%)]	[21 (37.50%)]	[5 (12.5%)]	0.008
Ineffective esophageal motility	[6(11.8%)]	[1 (1.8%)]	[4 (10.0%)]	0.132
Type 1 Achalasia	[4(7.8%)]	[2 (3.6%)]	[3 (7.5%)]	0.626
Type 2 Achalasia	[4(7.8%)]	[1 (1.8%)]	[5 (12.5%)]	0.129
Type 3 Achalasia	[1(2.0%)]	[2 (3.6%)]	[2 (5.0%)]	0.782
Combined EGJOO / Achalasia Type 1,2,3	[18 (35.3%)]	[26 (46.4%)]	[15 (37.5%)]	0.465
Absent contractility	[2 (3.9%)]	[3 (5.4%)]	[1 (2.5%)]	0.782
Distal Esophageal Spasm	[1(2.0%)]	[2 (3.6%)]	[2 (5.0%)]	0.733
Hypercontractile esophagous	[2 (3.9%)]	[0 (0.0%)]	[0 (0.0%)]	0.156
LES metrics [mean (SD)]	<b>`</b>			
BLESP	[34.0 (39.1)]	[37.2(22.3)]	[35.8(16.1)]	0.838
Supine IRP	[13.5 (7.3)]	[18.4 (10.2)]	[20.2(12.1)]	0.004
Upright IRP	[11.6 (7.3]	[13.5(9.0)]	[14.5(12.8)]	0.346
DCI	[1458.7(2158.8)]	[2138 (3138)]	[1166 (1254)]	0.124
DL	[7.3(2.2)]	[6.7 (1.9)]	[6.8(1.3)]	0.210
Functional markers of impaired bolus transit				
% with PEP or CP ≥20% [number (%)]	[(11 (21.6%)]	[21 (37.5%)]	[11 (27.5%)]	0.186
% with IBT ≥20%	[23(45.1%)]	[24(42.9%)]	[18(45.0%)]	0.967

bbreviations: BEDQ – Brief esophageal dysphagia questionnaire, BLESP – Baseline lower esophageal sphincter pressure, CP-Compartmentalized pressurization, DCL-Distal contractile ntegral, DL- distal latency, EGJOO- Esophagogastric junction outflow obstruction, IBT- Incomplete bolus transit, IRP- Integrated relaxation pressure, LC-Latent class, PEP- Panesophageal pressurization

### Figure 3a-c. HRM, Total BEDQ Score, Integrated Relaxation Pressure (IRP)





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of food in the question, ple	-	-	-	C33. 11 yOU		ie to eat	the type
	Cannot Eat This	Rarely/Nev er	Once or twice a month	1-2 times per week	3-5 times per week	Daily or almost daily	Several times pe day
Trouble eating solid food (meat, bread, vegetables)	0	0	0	0	0	0	0
Trouble eating soft foods (yogurt, jello, pudding)	0	0	0	0	0	0	0
Trouble swallowing liquids	$\bigcirc$	0	$\bigcirc$	0	$\bigcirc$	$\bigcirc$	$\bigcirc$
Pain while swallowing	0	$\bigcirc$	$\bigcirc$	0	$\bigcirc$	0	$\bigcirc$
Coughing or choking while swallowing foods or liquids	0	0	0	0	0	0	0
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	Cannot Eat This	Rarely/Nev er	Once or twice a month	1-2 times per week	3-5 times per week	Daily or almost daily	Several times pe day
Eating solid food (meat, bread, vegetables)	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
Eating soft foods (yogurt, jello, pudding)							



- achalasia.
- between latent classes
- LC 2.
- LES.

Division of Digestive Diseases **Department of Medicine** 

## Results

• Data from 147 patients (age range 21 – 92, 66.7 % female) was included (Table 1). Latent class (LC) analysis based on items 1-8 from the BEDQ showed 3 classes which were predominantly discriminated based on overall BEDQ score (Figure 1).

• Overall, 43.5% had normal HRM diagnosis based on CC 4.0, and 40.1% had a diagnosis of EGJOO or

• Chi-square analysis showed no differences in the proportions of patients with normal motility

• The proportion of patients with EGJOO was higher in

• Supine integrated relaxation pressure (IRP) was higher in LC 2 and 3 groups. LC 2 had a trend towards a higher distal contractile integral (DCI) which may be the reason for the different symptom profile.

### Conclusion

• A higher severity of dysphagia correlates with a greater degree of obstructive physiology of the

Notably, a high percentage of patients with more severe dysphagia have normal manometry, which likely underscores the importance of esophageal hypervigilance and visceral anxiety.

There may be utility in reserving HRM for patients with more severe dysphagia.