

Supplement Table 1. Clinical EGG Diagnoses Based on Percentage Distribution of Gastric Myoelectrical Activity (GMA) at baseline and after the Water Load Satiation Test (WLST) in Healthy Subjects

Clinical EGG Diagnoses	Percentage Distribution of GMA* in Response to the WLST
Normal 3 cpm GMA (2.4-3.75 cpm)	>18% at baseline AND >10%, 23%, and 36% at 10, 20, and 30 minutes after WLST at 2 or more time periods
Hyper-Normal 3 cpm GMA (2.5-3.75 cpm)	>54% at baseline AND >36%, 57%, and 68% at 10, 20, and 30 minutes after WLST at 2 or more time periods
Hypo-Normal 3 cpm GMA (2.5-3.75 cpm)	<18% at baseline AND <10%, 23%, and 36% at 10, 20, and 30 minutes after WLST at 2 or more time periods
Bradygastria (1.0-2.5 cpm)	>61% at baseline AND >77%, 65%, and 45% at 10, 20, and 30 minutes after WLST at 2 or more time periods
Tachygastria (3.75-10 cpm)	>25% at baseline AND >18%, 17%, and 17% at 10, 20, and 30 minutes after WLST at 2 or more time periods
Mixed Dysrhythmia: Bradygastria AND Tachygastria	normal ranges listed above at baseline AND at increased % listed above at 10, 20, and 30 minutes after WLST at 2 or more time periods
Duodenal-Respiration (10-15 cpm)	>10% at baseline AND >6%, 5%, and 9% at 10, 20, and 30 minutes after WLST at 2 or more time points

*the % GMA is expressed as the percentage distribution of power in each of the frequency ranges for the baseline and 0-10, 11-20 and 21-30 minute periods after the WLST

Supplement Table 2. Characteristics at enrollment between enrolled patients with completed vs. missing gastric myoelectrical activity (GMA)

Characteristic at enrollment	Category	Completed GMA (n=397)	Missing GMA (n=109*)	P-value
Clinic	A	24	4	<0.0001
	B	32	6	
	C	6	0	
	D	25	0	
	E	66	48	
	F	68	40	
	G	54	3	
	H	24	6	
	I	98	2	
Age - yrs	Mean (SD)	44 (14)	45 (14)	0.85
Sex	Male	57 (14%)	13 (8%)	0.51
	Female	340 (86%)	96 (92%)	
Race	Non-white	35 (9%)	9 (8%)	0.85
	White	362 (91%)	100 (92%)	
Gastric emptying status	Gastroparesis	284 (72%)	82 (77%)	0.29
	Functional dyspepsia	113 (28%)	25 (23%)	

*Two patients with missing gastric emptying status

Supplement Table 3. Characteristics at enrollment in patients with clinician-assessed normal vs dysrhythmia GMAs by Gastroparesis and Functional Dyspepsia status

Characteristics at Enrollment	Gastroparesis			Functional Dyspepsia		
	Dysrhythmia GMA (n=188)	Normal GMA (n=96)	P-value	Dysrhythmia GMA (n=73)	Normal GMA (n=40)	P-value
Demographics						
Gender (female)	156 (83%)	82 (85%)	0.73	65 (89%)	37 (92%)	0.74
Age – yr	44 (13)	45 (14)	0.51	45 (15)	43 (17)	0.61
Race (white)	169 (90%)	88 (92%)	0.68	68 (93%)	37 (92%)	1.00
Ethnicity (Hispanic)	35 (19%)	9 (9%)	0.06	11 (15%)	3 (8%)	0.37
Body mass index (kg/m ²)	29 (7)	26 (7)	0.0004	29 (10)	26 (9)	0.05
Characteristics of gastroparesis						
Etiology			0.32			0.92
Diabetes	57 (30%)	37 (39%)		19 (26%)	9 (22%)	
Idiopathic	123 (65%)	54 (56%)		53 (73%)	30 (75%)	
Fundoplication	8 (4%)	5 (5%)		1 (1%)	1 (2%)	
Acute onset of symptoms	73 (39%)	41 (43%)	0.61	19 (26%)	19 (48%)	0.02
Severity			0.23			0.14
Grade 1, mild	32 (17%)	24 (25%)		16 (22%)	8 (20%)	
Grade 2, compensated	130 (70%)	58 (60%)		52 (71%)	24 (60%)	
Grade 3, gastric failure	24 (13%)	14 (15%)		5 (7%)	8 (20%)	
Duration of symptoms – yr	5 (7)	7 (7)	0.39	8 (9)	5 (4)	0.01
Rome III categorization						
PDS only	36 (19%)	20 (21%)	0.59	15 (21%)	13 (32%)	0.56
EPS only	20 (11%)	7 (7%)		4 (5%)	2 (5%)	
Both PDS and EPS	94 (50%)	54 (56%)		42 (58%)	19 (48%)	
Neither PDS nor EPS	38 (20%)	15 (16%)		12 (16%)	6 (15%)	
Scintigraphy						
2-hr solid retention - %	64 (18)	66 (17)	0.28	32 (16)	29 (16)	0.37
4-hr solid retention - %	30 (21)	32 (21)	0.55	4 (3)	4 (3)	0.50
Medication use						
Systemic corticosteroids	48 (26%)	13 (14%)	0.02	18 (25%)	7 (18%)	0.48
Narcotic pain medications	66 (35%)	31 (32%)	0.69	25 (34%)	10 (25%)	0.40
Neuropathic pain medications	60 (32%)	31 (32%)	1.00	28 (38%)	6 (15%)	0.01
Antidepressants	150 (80%)	79 (82%)	0.75	57 (78%)	33 (82%)	0.63
Mirtazapine (Remeron)	12 (6%)	2 (2%)	0.15	6 (8%)	3 (8%)	1.00
Co-Morbidities						
GERD	125 (66%)	62 (65%)	0.79	49 (67%)	25 (62%)	0.68

Characteristics at Enrollment	Gastroparesis			Functional Dyspepsia		
	Dysrhythmia GMA (n=188)	Normal GMA (n=96)	P-value	Dysrhythmia GMA (n=73)	Normal GMA (n=40)	P-value
Interstitial cystitis	6 (3%)	2 (2%)	0.72	1 (1%)	2 (5%)	0.29
Endometriosis	25 (13%)	14 (15%)	0.86	15 (21%)	6 (15%)	0.61
Migraine headaches	75 (40%)	34 (35%)	0.52	29 (40%)	13 (32%)	0.54
Chronic fatigue syndrome	24 (13%)	11 (11%)	0.85	6 (8%)	2 (5%)	0.71
PCOS	17 (9%)	10 (10%)	0.83	7 (10%)	4 (10%)	1.00
Fibromyalgia	27 (14%)	15 (16%)	0.86	19 (26%)	9 (22%)	0.82
Eating disorder	7 (4%)	2 (2%)	0.72	1 (1%)	1 (2%)	1.00
Anxiety requiring treatment	57 (30%)	18 (19%)	0.05	18 (25%)	6 (15%)	0.34
Major depression requiring treatment	62 (33%)	26 (27%)	0.34	22 (30%)	7 (18%)	0.18
Bipolar	11 (6%)	5 (5%)	1.00	10 (14%)	4 (10%)	0.77
PAGI-SYM						
GCSI total score	2.9 (1.1)	2.7 (1.1)	0.24	2.7 (1.0)	2.8 (1.0)	0.73
Nausea/vomiting subscale	2.2 (1.5)	1.9 (1.4)	0.11	1.9 (1.3)	2.0 (1.2)	0.72
Nausea	3.2 (1.6)	3.1 (1.5)	0.75	3.0 (1.6)	3.2 (1.5)	0.47
Retching	1.8 (1.7)	1.3 (1.6)	0.01	1.4 (1.7)	1.5 (1.6)	0.91
Vomiting	1.7 (1.9)	1.4 (1.7)	0.22	1.2 (1.6)	1.2 (1.6)	0.96
Post-prandial fullness/early satiety subscale	3.4 (1.2)	3.3 (1.3)	0.59	3.3 (1.4)	3.5 (1.2)	0.46
Stomach fullness	3.6 (1.2)	3.4 (1.3)	0.18	3.5 (1.5)	3.6 (1.3)	0.59
Unable to finish meal	3.4 (1.6)	3.4 (1.5)	0.91	3.3 (1.6)	3.6 (1.4)	0.29
Felt full after meals	3.7 (1.3)	3.5 (1.6)	0.42	3.6 (1.5)	3.8 (1.3)	0.49
Loss of appetite	2.8 (1.6)	2.9 (1.6)	0.80	2.7 (1.6)	2.8 (1.5)	0.78
Bloating subscale	3.1 (1.6)	3.0 (1.7)	0.54	3.1 (1.7)	3.0 (1.7)	0.85
Bloating	3.3 (1.6)	3.1 (1.7)	0.45	3.2 (1.7)	3.2 (1.7)	0.98
Stomach visibly larger	3.0 (1.8)	2.9 (1.8)	0.67	3.0 (1.9)	2.8 (1.9)	0.72
Upper abdominal pain subscale	3.1 (1.5)	2.8 (1.5)	0.08	2.8 (1.5)	2.9 (1.6)	0.95
Lower abdominal pain subscale	1.9 (1.6)	2.0 (1.5)	0.92	2.1 (1.4)	1.9 (1.6)	0.56
Heartburn/regurgitation subscale	1.9 (1.4)	1.8 (1.3)	0.47	1.7 (1.4)	1.6 (1.2)	0.79
Constipation	2.4 (1.8)	2.8 (1.7)	0.07	2.6 (1.7)	2.8 (1.7)	0.64
Diarrhea	1.8 (1.8)	1.8 (1.7)	0.93	1.6 (1.6)	1.2 (1.6)	0.16
Water load test						
Amount – mL	394 (239)	346 (169)	0.05	405 (215)	396 (247)	0.84
Amount < 238 mL	46 (25%)	28 (29%)	0.48	14 (19%)	7 (18%)	1.00
Amount < 300 mL	72 (39%)	39 (41%)	0.80	24 (33%)	16 (40%)	0.54

*GERD = Gastroesophageal Reflux Disease; PCOS = Polycystic Ovary Syndrome; PDS = Postprandial Distress Syndrome; EPS=Epigastric Pain Syndrome; GI = Gastrointestinal