

	Females	Age	BMI	Basal LES tone, mmHg	GerdQ	pH<4, %	HODQ	Achalasia
IRP10-15	65%	61±2*	25.5±0.6	26.7±1.5	7.2±0.3	6.0±1.0	5.5±0.8	20%
IRP>15	73%	60±2	25.1±0.7	41.3±1.5	7.0±0.3	3.6±1.6	10.8±0.8	69%
p-value	NS	NS	NS	<0.0001	NS	0.215	<0.0001	<0.0001

*Data given as mean±SE

Mo1888

Contraction Amplitude Is a Relevant Predictor of Bolus Transit During Sitting Viscous Solution Swallows in Healthy Individuals: Preliminary Results of a Multicenter Study Using High Resolution Impedance Manometry (HRIM)

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Introduction: The capacity to predict bolus transport (BT) is relevant for a manometric study. Its manometric predictors for sitting viscous solution have not been established. **AIM:** To establish high resolution manometry predictors of adequate BT during sitting viscous solution swallows. **Methods:** Healthy volunteers were recruited from nine centers. Sitting swallows with an apple sauce-like standardized ion-containing solution were analyzed using HRIM to determine BT. Breaks were evaluated in 5 mm Hg intervals isobaric contours ranging from 15 to 35 mm Hg. These breaks were characterized in terms of number, distance and time interval between the contour tails. The breaks analysis was performed excluding swallows with abnormal DCI, IRP, DL or CVF. Predictive capacity was evaluated using ROC curves, t student and multivariate analysis. **Results:** 220 swallows in 25 healthy volunteers (13 men, mean age 27 years (21-60)) were analyzed. 128/220 (58.2%) showed complete BT. Using ROC curves analysis we observed: 1. For each isobaric contour, the distance and time characterization of breaks showed a similar performance, and was always superior to number of breaks. 2. Even though time and distance evaluation of breaks for all isobaric contour showed an area under the curve (AUC) >0.75, the values for 20 mmHg isobaric contour time (Iso-20 time, AUC 0.832) and distance (Iso-20 dist, AUC 0.871) were significantly better (p<0.05 for most evaluations). 3. For Iso-20 dist and Iso-20 time, the best cutoff values were 3 cms (sensitivity 82% and specificity 78%) and 2 sec (sensitivity 79% and specificity 75%), respectively. On t-test analysis of another variables, only DCI (p<0.05) showed association with BT, while CVF, DL and IRP did not (p>0.05). We performed sequential multiple regression analysis to choose from different variables evaluating contraction amplitude (Iso-20 time, Iso-20 dist and DCI) and peristalsis (DL and CVF). Only independently associated variables were then introduced into a final multiple regression analysis showed in Table 1. Only Iso-20 dist showed an independent association with BT. **Conclusions:** 1. Incomplete BT with sitting viscous solution is very frequent. 2. Contraction amplitude still seems to be relevant for BT in this setting. 3. Characteristics of individual breaks, and not its number are relevant in predicting BT. 3. The best BT predictor is break distance using the 20 mm Hg isobaric contour, and the 3 cms cutoff seems to be the best. **Final Multivariate Analysis**

Variable	p value
Iso-20 dist	<0.001
DCI	0.16
CVF	0.97
IRP 4s	0.80

Iso-20 dist: Distance break using 20 mmHg isobaric contour. DCI: Distal contractile integral. CVF: contractile front velocity. IRP 4s: 4 sec integrated relaxation pressure

Mo1889

Acotiamide, a Novel Prokinetic Drug, Reduces Both Esophageal Body Contractility and the Tone of the Lower Esophageal Sphincter

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Background and Aim: Acotiamide hydrochloride is a newly developed prokinetic drug approved to treat functional dyspepsia (FD). Although acotiamide is thought to stimulate gastrointestinal (GI) motility by inhibiting acetylcholinesterase (AChE), the effects of acotiamide on esophageal motility have yet to be examined. The objective of the present study was to elucidate how acotiamide affects esophageal motility. **Methods:** Patients with FD often have other overlapping functional GI disorders. Nine patients with FD (7 males) who also had symptoms strongly suggesting esophageal motility disorders were enrolled. Both esophageal body contractility and the tone of the lower esophageal sphincter (LES) were evaluated by high-resolution manometry (Manoscan ZTM) based on distal contractile integral (DCI), basal LES pressure (respiratory mean) and integrated relaxation pressure (IRP) before and after application of acotiamide. **Results:** Mean patient age was 64.6 ± 4.4 years. According to the Chicago classification criteria of esophageal motility disorders, 3 patients had EGJ outflow obstruction; 2 had absent peristalsis; 1 each had frequently failed peristalsis, weak peristalsis with a small break, and distal esophageal spasm; and 1 was normal. Administration of acotiamide (100 mg) 3 times per day before meals significantly improved FD and GERD symptoms, with the mean frequency score for GERD symptoms (FSSG) being significantly lower after (11.1 ± 4.3) than before (20.1 ± 5.2) treatment with acotiamide. Interestingly, acotiamide treatment significantly reduced the extent of DCI (1899 ± 722.5 vs. 2731.1 ± 1250), basal LES pressure (19.4 ± 2.1 mmHg vs. 27.7 ± 2.8 mmHg) and IRP (9.5 ± 0.62 mmHg vs. 12.8 ± 1.7 mmHg). DCI could not be measured in 3 patients, 2 with aperistalsis

and 1 with frequently failed peristalsis. Furthermore, reductions in esophageal body contractility and tone of LES were especially pronounced in the patients with EGJ outflow obstruction. **Conclusions:** Acotiamide, a novel prokinetic drug, can reduce both esophageal body contractility and LES tone, suggesting that acotiamide may become a novel treatment for esophageal motility disorders.

Mo1890

MicroRNA130a Is Highly Expressed in the Esophageal Mucosa of Esophageal Achalasia

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Background and aims: Esophageal achalasia is a motility disorder due to incomplete relaxation of the lower esophageal sphincter, and is considered as a risk factor of esophageal cancer. Etiologies of esophageal achalasia, especially the process leading to carcinogenesis, remain largely unknown. Per-Oral Endoscopic Myotomy (POEM) was recently established as a minimally invasive and high curability therapy. The aim of our study was to identify the specific microRNAs (miR) of esophageal achalasia and to assess the alteration of these miRs before and after POEM. **Material and methods:** We collected 29 biopsy samples from the middle esophageal mucosa of esophageal achalasia patients and healthy samples. mRNA was extracted and was subjected to microarray. We then identified the differentially expressed miR patterns in achalasia compared with healthy samples, and analyzed them quantitatively on real time reverse transcription polymerase chain reaction (RT-PCR). Correlation between these specific miRs in esophageal achalasia and the patients' clinical background, disease duration, life history, type of achalasia, and degree of esophageal dilation achalasia were also investigated. In addition, we analyzed the alteration of selected miR expression before and after POEM. **Results:** Background of samples is shown on Table I. Microarray showed high expression of miR361-5p and miR130a in the esophageal mucosa in esophageal achalasia compared to healthy control. We analyzed these miRs quantitatively via RT-PCR and found that only miR130a showed significantly higher expression in achalasia than healthy subjects (P<0.0001). Significant correlation between expression of miR130a and male (vs female, P=0.0027) and non-smoker (vs smoker, P=0.0019) were also observed in achalasia patients. There was no correlation between expression of miR130a and disease duration, type, or degree of esophageal dilation in achalasia. On multivariate analysis, smoking history was the most significant background that correlated with expression of miR130a (P=0.0084). No significant change in miR130a expression was observed before and after POEM. **Conclusions:** Our study indicated that miR130a could be a biomarker of esophageal achalasia. **Background of samples**

Male: Female =14:15
Age: 46 years old (range 23-85)
Disease duration: 60 months (range 5-564)
Smoker: non-Smoker =13:15 (unknown 1)
Straight type: Sigmoid type =23:6
I: II: III (degree of esophageal dilatation) = 7:22:0

Mo1891

Gastric Impedance Isocontour Maps Can Detect Axial Shortening of the Esophagus in Association With Various Esophageal Motor Events

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Background: Longitudinal muscle contraction of the esophagus plays an important role in the physiology and pathophysiology of esophageal motor function; it also causes axial shortening of the esophagus. LES lift is a surrogate marker of longitudinal muscle contraction which can be detected by high resolution manometry (HRM). The HRM impedance topographs show a sharp impedance transition at the border between the lower edge of LES and stomach. **Aims:** We tested the hypothesis that gastric impedance Isolines can detect LES lift and therefore the axial shortening of the esophagus. **Methods:** An automated method was developed. HRM impedance recordings (HRM- impedance system by GIVEN) of 8 healthy subjects obtained during 2 hour post-prandial period were analyzed. Impedance data were digitized and an edge detection method using a contouring algorithm was developed. An impedance threshold that reflected the transition zone (TZ) between the lower edge of LES and stomach was identified. Next, a custom developed software program identified the amplitude (cranial movement) and duration of all the movements of impedance TZ during the entire recording, using a symbolic representation of the impedance TZ time series, based on the quantization of the linear regression of TZ segments. HRM plots were visually examined (by RKM) to identify motor events associated with the movements of the impedance TZ. **Results:** Impedance TZ moved in the cranial direction in association with following, 1) expiratory phase of respiration, 2) swallow (SW), 3) TLESR with no reflux and 4) TLESR with reflux. Wilcoxon rank sum test results indicate statistically significance differences in the amplitude and duration between different motor events as shown in Table 1. **Conclusion:** Gastric impedance analysis is a relatively simple technique to measure the longitudinal muscle contraction of the esophagus and associated motor events. We report the development of computer software program that can detect longitudinal muscle contraction of the esophagus automatically over extended time periods.