REFERENCE

1. Kahrilas PJ, et al. The Chicago Classification of Esophageal Motility Disorders, v3.0 *Neurogastroenterol Motil* 2015;**27**(2):160–174.

PWE-089 UNCOVERING PROGNOSTIC MARKERS IN PATIENTS WITH TYPE 1 ACHALASIA USING SOLID BOLUS SWALLOW

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Introduction Type 1 achalasia diagnosis based on the standard water swallow method [1] has shown homogenously to having poor prognosis compared other subtypes. Moreover, the response to solid bolus swallows in patients with type 1 achalasia may differ from standard water swallows thus can pave alternative treatment plans.

The aim of this study is to investigate the nature of the oesophageal motility in patients with type 1 achalasia when challenged with solid swallows.

Method Patients with type 1 achalasia were selected from 201–018.

The type 1 achalasia diagnosis was based on high-resolution manometry testing (Sierra Scientific Instruments) and the Chicago classification (CC)[1]. Solid bolus swallows were performed using bread and butter sandwich meal which was consumed by patients' with their bitesize volumes. The distal contractile integral and the length of the panoesophageal pressurisation on CC criteria were adopted for the solid swallows [2] to assess the oesophageal body motility.

Results In total, 76 patients (F:M=50:48, aged 1–9 years) were diagnosed with achalasia type 1 based on CC who also underwent bread swallow assessment.

38/76 patients (50%) showed oesophageal body motility features contradictory to type 1 achalasia on solid bolus: 33/38 patients (86.8%) demonstrated at least two swallows with panoesophageal pressurisation, 5/38 (13.2%) demonstrated reserved oesophageal body peristalsis on 2 or more occasions during solid bolus swallows.

Conclusion This research indicates that solid swallows may add valuable clinical information for tailoring the treatment of patient with type 1 achalasia.

Conducting solid bolus swallows on achalasia type 1 patients showed a mixture of response: i) unchanged response to standard water swallow outcome (50%) , ii) mimicking type 2 achalasia (43.4%) and iii) revealing peristaltic activity (6.6%)

REFERENCE

1. Kahrilas PJ, et al. The Chicago Classification of Esophageal Motility Disorders, v3.0 *Neurogastroenterol Motil* 2015;**27**(2):160–174.
2. Sweis RT, et al. 2011. Normal values and inter-observer agreement for liquid and solid bolus swallows in upright and supine positions as assessed by esophageal high-resolution manometry. *Neurogastroenterol Motil* 2011;**23**(6):509–516.

PWE-090 NOVEL APPROACH TO ASSESS THE OESOPHAGEAL CLEARANCE

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Introduction Barium swallow study is a common procedure to assess the oesophageal clearance but this is affiliated with radiation exposure and barium ingestion side-effects.

Aim Evaluate the readily available impedance-pH monitoring to assess the oesophageal clearance.

Method Sandhill multichannel pH-impedance (MII-pH) catheters (ZAN-BG-44) and Baxter saline solution (0.9 w/v NaCl concentration) were used in this study.

In-vitro Impedance Baseline Testing:

This involved submerging 23 MII-pH catheters in test-tube filled with saline for 30 minutes.

The baseline impedance threshold of saline was identified when the impedance tracing plateau for at least 10minutes.

Oesophageal Clearance Testing:

Upon completing the manometry and locating the lower oesophageal sphincter (LOS) depth, the MII-pH catheter was inserted trans-nasally and the most distal impedance sensor was positioned 3cm above the LOS followed by subsequent impedance sensors being positioned at 5cm, 9cm, 15cm and 19cm above the LOS. Patients drank 200mL of saline quickly within 20sec. The intra-oesophageal saline clearance timed was determined at each impedance sensor by comparing the intraluminal impedance value found in the in-vitro testing. The time taken for the complete clearance of saline from oesophageal lumen was recorded.

The control group in this study were asymptomatic of dysphagia and fulfilled the normal oesophageal body motility and LOS relaxation criteria on Chicago classification [1]. The patient groups had dysphagia and were diagnosed with achalasia or oesophagogastric junction outflow obstruction (OGJOO)[1].

Statistical t-test compared the oesophageal clearance time between the three groups.

Results In-vitro impedance threshold revealed 178.3 Ohms (mean) (95% CI: 160.2–98.30 Ohms).

In total 95 patients completed the test (M:F=44:51, aged 2–9 yrs)(see table 1). There was statistical significance in the oesophageal clearance time of saline between the control group and the: a) total patient groups ($p=0.0012$); b) OGJOO group ($p=0.0002$); c) achalasia group ($p=0.0021$). There was also statistical significant difference in the oesophageal clearance time between the patient groups ($p=0.0034$) indicating that achalasia patients having relatively prolonged retention.

Abstract PWE-090 Table 1 Oesophageal clearance time of saline (in mins.)

Group	Number of cases	Mean	95% CI
Control	41	0.38	0.31, 0.45
OGJOO	37	2.78	1.64, 3.93
Achalasia	17	41.02	19.22, 62.84

Conclusion This timed impedance monitoring technique can be incorporated in reflux monitoring studies and is a feasible technique to assess the oesophageal clearance without need of radiation or barium ingestion.

REFERENCE

1. Kahrilas P, et al., 2015 *Neurogastroenterol Motil.*, **27**(2):160–174.