

## **Achalasia: Bridging the Gap between Advances in Evolution of Diagnosis and Treatment Outcomes**

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Achalasia is a primary neurodegenerative disorder of the esophagus characterized by loss of function of the lower esophageal sphincter (LES) and of esophageal peristalsis, which causes symptoms such as dysphagia, regurgitation, weight loss, and chest pain. Esophageal manometry is the gold standard for the diagnosis of achalasia. However, the sensitivities of these traditional studies are challenged since the emergence of advance technique for the diagnosis of esophageal achalasia by using a High resolution manometry (HRM) with pressure topography plotting into the diagnostic armory. Together, these technologies are also called high-resolution esophageal pressure topography (HREPT). HREPT is capable of identifying impaired esophagogastric junction relaxation and subcategorize achalasia into three clinically relevant subtypes based on the contractile function of the esophageal body according to the Chicago classification which seem to predict treatment outcomes. Type I (classic achalasia) refer to patients with no significant pressurization within the esophageal body and impaired LES relaxation. Water swallows cause rapid pan-esophageal pressurization which may exceed LES pressure, causing the esophagus to empty in a type II patients (achalasia with compression). Type III patient which is also known as spastic achalasia, usually associated with rapidly propagated pressurization attributable to an abnormal lumen obliterating contraction. Such evolutionary technique bridges the gap between the conventional tool and the high resolution manometry increasing the sensitivity and specificity of the diagnosis modality. In addition, the introduction of endoscopic ultrasound as an adjunctive evaluation tool.

Recent advance in the evolution of achalasia treatment includes the use of high resolution manometry to predict the treatment outcome, the introduction of peroral endoscopic myotomy (POEM). The first randomized controlled 2-year follow-up report conducted by the European Achalasia Trial group indicated that laparoscopic Heller myotomy (LHM) was not superior to pneumatic dilations (PD). On the other hand, publications on satisfactory long-term success of laparoscopic surgical outcome continue to emerge. In addition, laparoscopic single-site surgery proves to be applicable to LHM. The better current treatment option is an ongoing matter of debate between PD and LHM. However, with the emergence of recent advance in evolution of HREPT, we are able to identify clinically relevant phenotypes that we can target better for the therapies we currently have. Updated reports indicated that patients with Type II achalasia pattern on HRM responds to all therapies such as PD, Heller myotomy and Botox injection (70-100 % overall), as compared to Type I achalasia. Type III achalasia owed the worse outcome among the three. These results suggested that achalasia subtypes represent unique clinical phenotypes and may offer

criteria to plan the optimal treatment for the patient with achalasia. A new method with promising high quality in evaluation of procedure efficacy, such as EndoFLIP, provides a quantitative assessment of luminal patency and sphincter distension.

POEM is a promising new technique but needs long term results. The data provided until now suggest that POEM offers excellent short-term symptom resolution, with improvement of dysphagia. The effectiveness of this novel therapy requires long-term follow-up and comparative studies with other treatment modalities for achalasia.