

Introduction

-Achalasia is a rare esophageal motility disorder due to degeneration of ganglion cells in the myenteric plexus leading to failure of relaxation of the distal esophageal sphincter.

-Current treatment options include pneumatic dilation, laparoscopic heller myotomy, and peroral endoscopic myotomy.

-Esophageal functional luminal imaging probe (EsoFLIP, Medtronic, Minneapolis, MN) is an emerging therapeutic modality for management of achalasia, however, data is limited.

-This device utilizes high resolution impedance planimetry that provides a real-time topographical depiction of the esophageal lumen without the need for fluoroscopy followed by hydraulic dilation.

-This is the first systematic review and meta-analysis to evaluate safety and efficacy of EsoFLIP for the management of achalasia.

Methods

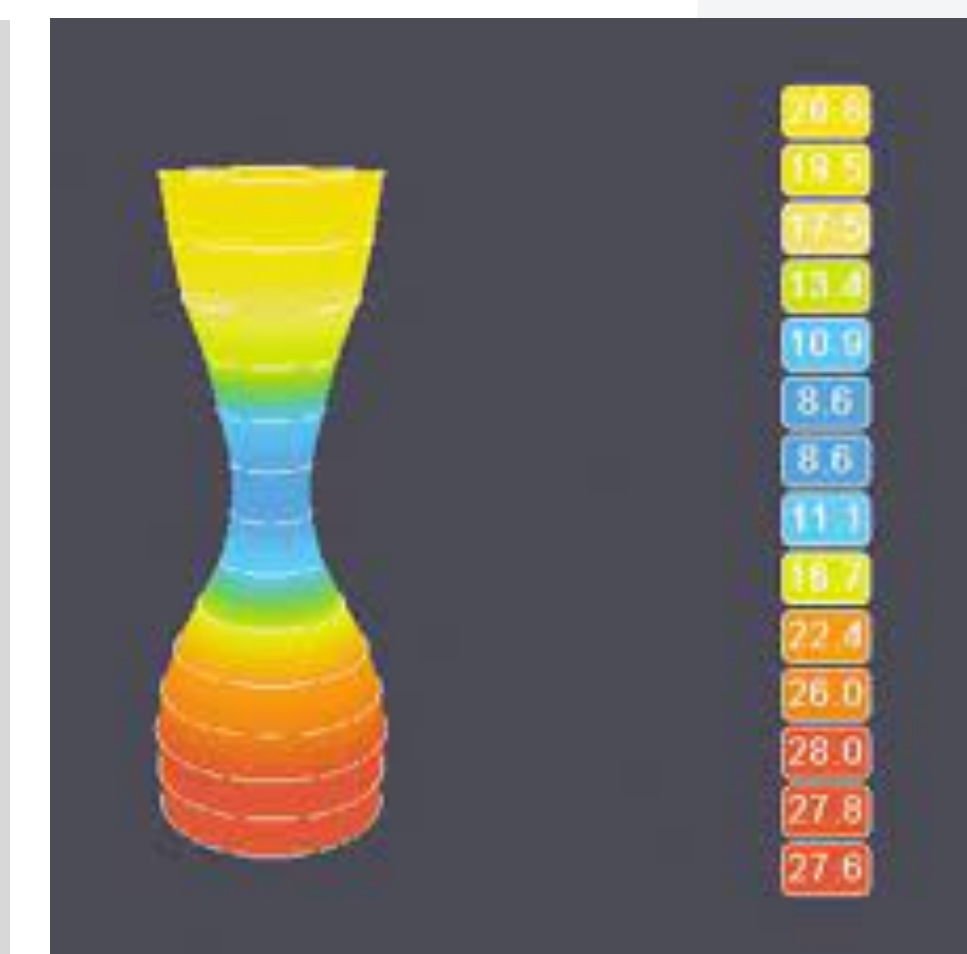
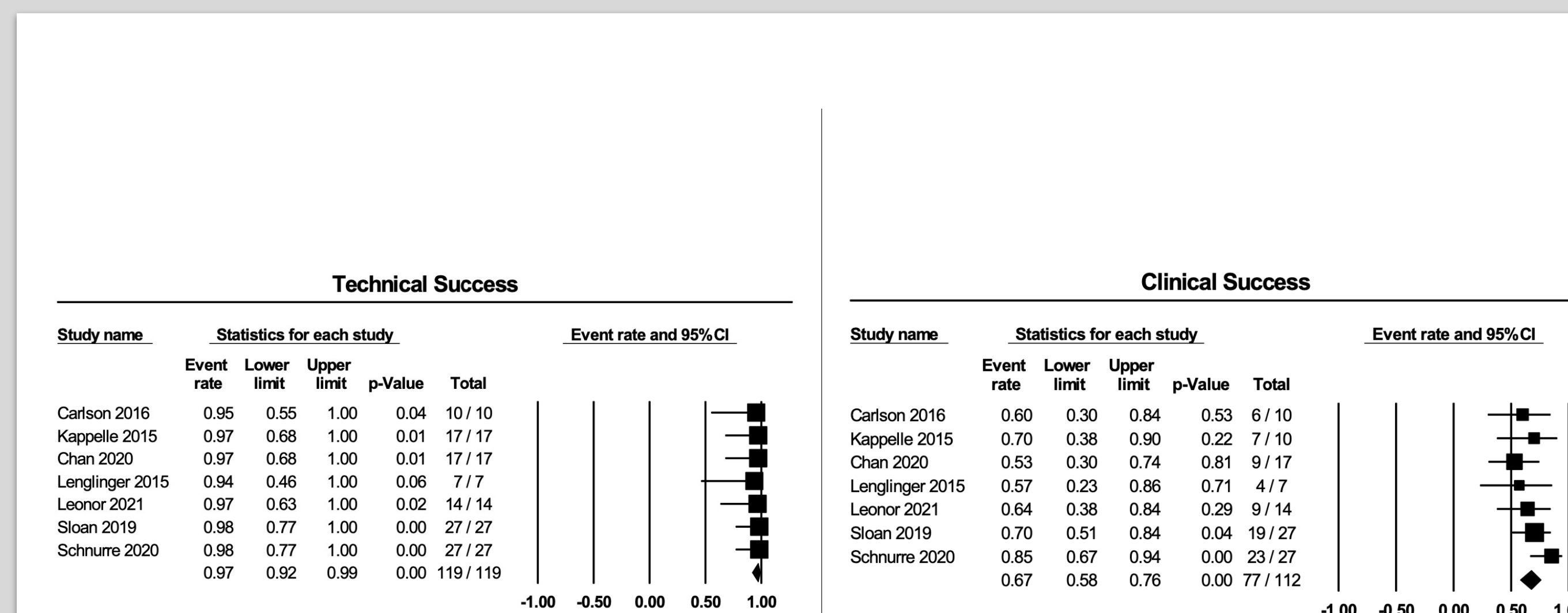
-Several electronic databases and conference proceedings such as PubMed, Google Scholar, Web of Science, EMBASE, CINAHL (from inception through May 2021) were reviewed to identify studies reporting the use of EsoFLIP for achalasia.

-The primary outcomes assessed were technical and clinical success of EsoFLIP in management for achalasia.

-Technical success was defined as the ability to successfully dilate the esophagus up to 30 mm with the EsoFLIP balloon.

-Clinical success was defined as the ability to achieve a post-dilation Eckardt score (ES) < 4.

-The secondary outcomes assessed were total and individual adverse event (AE) rates secondary to the procedure and recurrence of dysphagia post procedure.



Results

-7 studies reporting on 112 patients with a median age of 49.5 years were included in our final analysis. About half the patients were treatment naive.

-Mean pre-dilation Eckardt Score was 7. Technical and clinical success rate was 97% (95% CI 92%,99%; I2=0) and 67% (95% CI 58%, 76%; I2=0), respectively.

-Adverse event rate was 6% (95% CI 2.6%, 13%; I2=0) with perforation being the most common AE. Recurrence rate was 13% (95% CI 6%, 26%; I2=2). Post-dilation reflux was reported in 4 studies in 22 patients. Mean follow up was 2.1 months.

-Meta-analysis was conducted with Der Simonian and Laird random effects model using CMA software version 3.

Discussion

Our study demonstrated high technical success but lower clinical success as compared to other modalities. However, EsoFLIP has the advantage of having a diagnostic procedure (EndoFLIP) performed at the same time. While further studies are needed to validate our findings, this technology is a promising addition to the armamentarium for management of achalasia.