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Transoral oesophagogastric fundoplication is effective in treating proton pump inhibitor-resistant regurgitation

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The Randomized EsophyX vs Sham, Placebo-Controlled Transoral Fundoplication (RESPECT) trial demonstrates that transoral oesophagogastric fundoplication (TF) is effective in reducing symptoms of regurgitation in proton pump inhibitor (ppi)-resistant patients

► Philip Hendy reviews Hunter *et al.*¹

While ppi therapy has a high efficacy in treating heart burn, its impact on oesophageal regurgitation is considerably more modest.² Laparoscopic fundoplication (LF) can be an effective treatment, but there is a low referral rate (<10% of the qualifying group) because of patient and physician factors.³ TF is a non-incisional, endoscopic procedure which involves folding the stomach anteriorly around the oesophagus and securing it with multiple fasteners to increase sphincter potency. Retrospective data series have shown TF to be effective at improving gastro-oesophageal reflux disease (GORD), including regurgitation, but until now prospective randomised controlled trial data are lacking.

Patients with troublesome regurgitation (defined as moderate or severe symptoms more than once per week or mild symptoms two or more times per week as per the Montreal criteria) despite daily ppi were screened with barium swallow, oesophagogastrroduodenoscopy, 48 h pH oesophageal monitoring (off ppi) and high-resolution manometry. Patients with GORD and hiatal hernia <2 cm or no

hiatal hernia were randomised (2:1 ratio) to either TF followed by 6 months of placebo oral medication or to sham endoscopic surgery followed by 6 months of once or twice daily ppi. The primary endpoint was elimination of troublesome regurgitation at 6 months, with secondary endpoints, including the same outcome at 3 months and reduction of oesophageal acid exposure.

Six hundred and ninety-six patients were screened for eligibility, and 567 were excluded. The major reasons for exclusion were hiatal hernia >2 cm, absence of GORD, normal pH monitoring and long section of Barrett's oesophagus. Ten patients were excluded after recruitment (six from the TF group and four from the sham group); thus, the per-protocol analysis included 81 TF/placebo patients and 38 sham/ppi patients compared with the 87 and 42 in the intention-to-treat analyses. There was a statistically significant improvement in primary outcome (elimination of troublesome regurgitation) in the TF/placebo group with 58/87 (67%) versus 19/42 (45%) in the sham/ppi group ($p=0.023$). There was also a significant reduction in oesophageal acid exposure in the TF/placebo group compared with both baseline and the sham/ppi group. However, there was no significant improvement in heart burn or regurgitation scores compared with the sham/ppi group. By the 18-month follow-up, 71% (30/42) in the sham/ppi group had crossed over to TF and 28% (24/87) in the

TF/placebo group had recommenced ppi ($p<0.001$). With the exception of postoperative epigastric pain, there was no difference in adverse events between the TF and sham groups.

Comment

This study provides a positive answer to an important question, namely can TF improve oesophageal regurgitation in ppi-resistant cases? The screening process was rigorous, with one radiological and three invasive upper gastrointestinal investigations performed to identify suitable recruits. The results in favour of TF are credible and the reduced acid exposure (as assessed by 48 h oesophageal pH monitoring) in particular is a hard secondary endpoint and provides a good physiological outcome measure. The results of this study also align well with a recently published open-label study assessing similar measures.⁴ The authors acknowledge that the study may be criticised for its primary endpoint being relatively early (6 months), but do mention that longer term data are still being collected. One potential bias is the funding by the company which manufactures the TF device. One thing not described in the article is cost efficacy. Robust cost efficacy data are not available, but one study has suggested that at this stage TF is less cost effective than LF.⁵ Further studies are required to clarify this point, and with time it is likely that outcome data from this relatively new technique will improve with operator experience. It is clearly not for

every patient with reflux. Even among those selected as fulfilling the clinical criteria, only 19% were eligible after further physiology screening. The National Institute for Health and Care Excellence (NICE) in the UK recommends that TF “should only be used with special arrangements for clinical governance, consent and audit or research” (NICE 2011).

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Competing interests None.

Provenance and peer review Not commissioned; internally peer reviewed.

References

- 1 Hunter JG, Kahrilas PJ, Bell RC, *et al.* Efficacy of transoral fundoplication vs omeprazole for treatment of regurgitation in a randomized controlled trial. *Gastroenterology* 2015;148:324–33.e5.
- 2 Kahrilas PJ, Jonsson A, Denison H, *et al.* Regurgitation is less responsive to acid suppression than heartburn in patients with gastroesophageal reflux disease. *Clin Gastroenterol Hepatol* 2012;10:612–19.
- 3 Liu JY, Finlayson SRG, Laycock WS, *et al.* Determining an appropriate threshold for referral to surgery for gastroesophageal reflux disease. *Surgery* 2003;133:5–12.
- 4 Trad KS, Barnes WE, Simoni G, *et al.* Transoral incisionless fundoplication effective in eliminating GERD symptoms in partial responders to proton pump inhibitor therapy at 6 months: the TEMPO randomized clinical trial. *Surg Innov* 2015;22:26–40.
- 5 Funk LM, Zhang JY, Drosdeck JM, *et al.* Long-term cost-effectiveness of medical, endoscopic and surgical management of gastroesophageal reflux disease. *Surgery* 2015;157:126–36.