Systematic review: the effects of conservative and surgical treatment for obesity on gastro-oesophageal reflux disease

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CRD summary
The review concluded that dietary and lifestyle interventions may improve gastro-oesophageal reflux disease in obese patients, but the most favourable effect was likely to be found after bariatric surgery (especially Roux-en-Y bypass). Given the unknown quality of the included studies, differences in study characteristics and the small sample sizes, the authors' conclusions have to be interpreted with caution.

Authors' objectives
To assess the effects of various weight-reducing modalities on manifestations of gastro-oesophageal reflux disease (GERD) in obese patients.

Searching
PubMed, EMBASE and The Cochrane Library were searched for articles in English or Dutch. Search terms were reported. Reference lists of retrieved articles and reviews were searched.

Study selection
Randomised controlled trials (RCTs), prospective studies and retrospective studies of weight-reduction interventions for treatment of obese or overweight participants and that reported data on GERD (symptoms or established diagnosis) were eligible for inclusion. Overweight was defined as a body mass index (BMI) over 25 and obese as BMI over 30. Weight-reduction interventions could be diet, lifestyle and diet or bariatric surgery, such as gastric banding, vertical gastric banding, laparoscopic adjustable gastric banding and roux-en-Y gastric bypass. Relevant outcomes were effect on GERD and weight loss. Studies with GERD as a secondary outcome were excluded. Case reports and expert opinion articles were excluded.

The included studies examined diet and lifestyle, gastric banding and gastric bypass in patients with a mean pre-study BMI range of 23.5 to 56; all studies except one reported a mean BMI of over 30. GERD was predominantly measured by QUEST symptom questionnaires and 24-hour pH endoscopy.

The authors did not state how many reviewers performed study selection.

Assessment of study quality
Studies were assessed according to Cochrane criteria of patient selection, intervention, follow-up, confounders and outcomes reported.

Quality assessment was undertaken by two reviewers. Disagreements were resolved by consensus.

Data extraction
Data on effects on GERD and weight loss were extracted.

The authors did not state how many reviewers were involved in data extraction.

Methods of synthesis
Studies were narratively synthesised and grouped according to intervention type: lifestyle and diet; banding procedures; and bypass surgery.

Results of the review
Thirty-four publications were included in the review (n=2,334): four RCTs, 27 prospective studies and three retrospective studies.

Four studies compared different types of weight-reducing modalities. Seven studies assessed diet and lifestyle. Eleven studies assessed bypass. Twenty studies assessed banding procedures. Study sample size ranged from eight to 587 participants. Length of follow-up ranged from one week to 208 weeks.

Diet and lifestyle studies mostly showed positive effects on obesity-related GERD.

Bypass surgery studies showed a mostly positive effect on obesity-related GERD, although most of the studies only used QUEST symptom questionnaires rather than objective measures.

Banding procedures showed mixed results; some studies showed positive effects and others showed negative effects or no effect.

Authors' conclusions
Dietary and lifestyle interventions may improve GERD in obese patients, but the most favourable effect is likely to be found after bariatric surgery (especially Roux-en-Y bypass).

CRD commentary
Inclusion criteria for the review were clearly defined. Several relevant databases were searched. Publication bias was not assessed and could not be ruled out. There was potential for language bias as only English- and Dutch-language articles were included. The authors attempted to minimise reviewer error during quality assessment; it was unclear whether the same rigorous methodology was extended to study selection and data extraction. Quality assessment was based on a standard checklist, but the results were not presented and this made study quality difficult to determine. Many studies had small sample sizes and there was a wide variation in study characteristics (acknowledged by the authors). Studies were synthesised narratively, which appeared appropriate considering the differences in study characteristics, interventions and outcomes.

Given the unknown quality of the included studies, differences in study characteristics and the small study sample sizes, the authors’ conclusions have to be interpreted with caution.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated that more studies were needed to determine the factors that predict the course of GERD after gastric banding. Standardised definitions and outcome measures needed to be established to improve comparability across studies.

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