Evidence Table

Clinical Area: **Bariatric surgery using the Lap-band technique**
Reference: **Cottam DR, Atkinson J, Anderson A et al. A case-controlled matched-pair cohort study of laparoscopic Roux-en-Y gastric bypass and Lap-Band® patients in a single US center with three year follow-up. *Obesity Surg* 2006; 16: 534-540.**

Study Type: Cohort – (Prospectively collected data)
Study Aim: To compare weight loss and co-morbidity reduction with open or laparoscopic Roux-en-Y gastric bypass and laparoscopic adjustable gastric band procedures.

Outcomes
- *Primary:* Weight loss, change in co-morbidities.
- *Secondary:* Adverse effects.

Design
- *Number of subjects:* N=362 (n=181 matched pairs)
- *Description of study population:* Lap-band group: Mean BMI=47.2; mean age=42 ± 13 years; 20% male: Gastric bypass group: Mean BMI=47.2; mean age=43 ± 10 years; 11% male
- *Inclusion criteria:* Patients who received the 10-cm Lap-Band (Inamed) or open or laparoscopic Roux-en-Y gastric bypass surgery. Did not discuss eligibility criteria e.g. age, BMI, etc.
- *Exposure/Intervention:* All patients underwent preoperative education regarding calorie reduction and diet change, and also received the same postoperative counseling regarding diet and exercise. The first 208 lap-band patients treated at a single institution in Las Vegas were matched to a gastric bypass patient according to time of surgery (±2 weeks) and BMI (±2). If there was more than one possible match, patients were matched (in order of priority) by age, sex and co-morbid conditions. If there were no possible matches, patients were removed from the study.
- *Source of outcome data:* Regular examinations and lab testing.
- *Length of follow-up:* 3 years.

Validity
- *Is the study type appropriate for the question(s) being asked?* Reasonable if RCT not feasible.
- *Population-based sample?* No, patients seen at one surgical center.
- *Potential selection biases:* Patients who selected gastric bypass, the more invasive and less reversible procedure, may have had more difficulty losing weight, or may have had a different level of motivation to change than patients selecting the lap-band.
- *Sufficient statistical power?* Not discussed.
- *Did an objective observer assess outcomes?* Not discussed.
- *Industry funding*? None declared.

- *Completeness of follow-up:* Only about 35 patients in the lap-band group and 27 patients in the gastric bypass group were available for the 3-year follow-up. The authors did not report how many pairs completed one or two years of follow-up.
- **Conclusions regarding validity of methods:**

There was a low rate of follow-up at 3 years and insufficient information on follow-up rates at other time points. There was also insufficient information on the objectivity of outcome assessment. The investigators included all cases and there may be a learning curve bias. (There was a much higher percent of lap-band reoperations during the first year of experience with this procedure).

Results

Excess weight loss (mean % excess weight)

Months	Lap-band group	Gastric bypass group	p-value
6	37± 15	57 ± 13	<0.001
12	48 ± 19	76 ± 16	<0.001
24	55 ± 23	80 ± 21	<0.001
36	51 ± 23	74 ± 25	<0.001

Co-morbidities. % condition resolved

	Lap-band group	Gastric bypass group	p-value
Type 2 diabetes	50	78	0.10
Insulin resistance	56	94	<0.001
Hypercholesterolemia	40	61	0.009
Hypertension	56	81	0.003

Adverse effects

- There were no deaths in either group.
- There was no statistically significant difference in the rate of major or minor reoperations. The rate of major surgery was 8% in the lap-band group and 5% in the gastric bypass group.

Authors' Conclusions

"When patients are matched with a 3-year follow-up according to time of surgery, age, sex and BMI, LRYGBP *(gastric bypass)* provides superior weight and co-morbidity reduction and can be done without severe complications. However, the LABG *(lap-band)* is an effective weight loss tool and not every patient wishes to have the LRYGBP."

Reviewer's Conclusions

The authors found significantly greater loss of excess weight and resolution of co-morbidities after gastric bypass than lap-band surgery. Limitations of the study were that there was low follow-up at 3 years and an unknown rate of follow-up at other time points, which could bias findings. In addition, the study was not blinded and there may have been residual confounding.