Diabetes

Gastric bypass induces remission in type 2 diabetes patients with mild-moderate obesity

The CROSSROADS randomised controlled trial of Roux-en-Y gastric bypass (RYGB) versus intensive lifestyle and medical intervention has demonstrated better rates of type 2 diabetes remission in patients with mild-moderate obesity treated with bariatric surgery.

In this study from the USA, 1,808 adults who met the inclusion criteria of type 2 diabetes, age 25-64 and with a BMI 30-45 kg/m^2, were identified from electronic databases. They were contacted by mail and phone and then screened using a multiphase recruitment process. Patients were educated about the treatment options.

A total of 43 patients were randomly allocated to RYGB (23) or the intensive lifestyle and medical intervention (20). The outcomes were determined by a blinded adjudicator. The primary endpoint was diabetes remission at one year (HbA_{1c} < 6.0%) off all diabetes medication.

The intensive lifestyle and medical intervention patients undertook at least 45 minutes of aerobic exercise (mostly brisk walking) for five or more days a week, a dietitian directed weight- and glucose-lowering diet (including weekly meetings with the dietitian for the first six months) and optimal diabetes medical treatment based on guidelines from the American Diabetes Association and European Association for the Study of Diabetes.

The RYGB patients underwent a four-week preoperative, and ten-month postoperative, behavioural modification regimen. The laparoscopic surgery created a 40 ml gastric pouch. There were no deaths or hospitalisations related to the surgery.

Of the original 43 patients, 11 withdrew before receiving any intervention, and the final numbers were 15 in the RYGB group and 17 in the medical/lifestyle intervention group, all of whom were followed to one year. The groups were equivalent in all baseline characteristics except that mean diabetes duration was longer in the RYGB group (11.4 ± 4.8 years vs 6.8 ± 5.2 years).

Diabetes remission at one year was 60% with RYGB vs 5.9% with the lifestyle/medical intervention (P = 0.002). Weight loss at one year was 25.8 ± 14.5% in the bariatric surgery group vs 6.4 ± 5.8% in the lifestyle/medical arm.

There were only 16 episodes of hypoglycaemia in the RYGB group compared with 43 in the medical/lifestyle intervention group.

There is mounting evidence that RYGB ameliorates type 2 diabetes, and can bring about remission. However, in many studies the recruitment of highly motivated individuals may have been a source of bias. This study used a well informed population-based sample, and included patients with a BMI < 35 kg/m^2, and so may give a more accurate real-life picture.

The 60% figure for diabetes remission is in line with findings from a UK national registry of more than 3,000 diabetes patients who were operated on between 2011 and 2013, which showed 65% remission of diabetes.[1]

Although there were issues from the surgical intervention that need long-term assessment, such as the loss of lean body mass, this study demonstrates that bariatric surgery is an effective intervention for type 2 diabetes in the mild to moderately obese patient.

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Cummings DE, Arterburn DE, Westbrook EO et al. Gastric bypass surgery vs intensive lifestyle and medical intervention for type 2 diabetes: the CROSSROADS randomised controlled trial. *Diabetologia* 2016;59(5):945-53

REFERENCE

1 Welbourn R, Small P, Finlay J et al. National bariatric surgery registry: second registry report. 2014

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