

AB055. Options in bariatric surgery: modelled decision analysis supports Roux-en-Y gastric bypass as the treatment of choice when type 2 diabetes is present

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Background: Obesity and type 2 diabetes mellitus (DMT2) represent significant healthcare burdens. Furthermore, patients with obesity and DMT2 have a decreased quality of life. Bariatric surgery can lead to significant improvements in BMI, metabolic function and quality of life. The aim of this study was to use modelled decision analysis to determine the optimal treatment strategy in obesity with DMT2.

Methods: A modelled decision analysis was constructed comparing medical management (MM), adjustable gastric banding (AGB), sleeve gastrectomy (SG) and Roux-en-Y gastric bypass (RYGB). The base case is a 40-year-old

female with a body mass index (BMI) of 40 and DMT2. A systematic review was performed to determine input variable values and ranges, using data from 9,233 patients. Comparison was made based on improvement in BMI and metabolic improvement. The payoff was quality adjusted life years (QALYs) 5 years from intervention. TreeAge Pro modelling software was used for analysis and sensitivity analysis.

Results: At baseline, RYGB gives the optimal QALY payoff of 3.47 QALYs. SG gave 3.08, AGB gave 2.62 and MM 2.45 QALYs respectively. Three input variables proved sensitive. Once metabolic improvement rates for SG exceed 79.6%, SG becomes the optimal strategy. If metabolic improvement rates in RYGB drop below 47.4%, SG becomes optimal. If the utility of RYGB drops below 0.69, SG becomes optimal.

Conclusions: At baseline, RYGB gives the best QALY payoff with combined obesity and DMT2. Under certain conditions, SG may offer at least equivalent outcomes and remains a viable option in obesity with DMT2.

Keywords: Type 2 diabetes mellitus (DMT2); Roux-en-Y gastric bypass (RYGB); sleeve gastrectomy; adjustable gastric banding

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