

Long-term impact of bariatric surgery in diabetic nephropathy

ABSTRACT

Background: Bariatric surgery has been shown to improve and resolve diabetes. However, limited literature about its impact on end-organ complications of diabetes is available. The aim of this study was to examine the long-term effect of bariatric surgery on albuminuria.

Methods: We studied 101 patients with pre-operative diabetes and albuminuria [defined as urine albumin:creatinine ratio (uACR) > 30 mg/g] who underwent bariatric surgery at an academic center from 2005 to 2014.

Results: Fifty-seven patients (56%) were female with a mean age of 53 (\pm 11) years. The mean pre-operative BMI and glycated hemoglobin (HbA1c) were 43.1 (\pm 7.6) kg/m² and 8.4 (\pm 1.8)%, respectively. The median pre-operative uACR was 80.0 (45.0-231.0) mg/g. Bariatric procedures included Roux-en-Y gastric bypass (n = 75, 74%) and sleeve gastrectomy (n = 26, 26%). The mean follow-up period was 61 (\pm 29) months. At last follow-up, the mean BMI was 33.8 (\pm 8.3) kg/m². The overall glycemic control improved after bariatric surgery. At last follow-up, 73% had good glycemic control (HbA1c < 7%) and 27% met diabetes remission criteria. The mean HbA1c at last follow-up was 6.7 (\pm 1.0)% and the median uACR was 30 (IQR 7-94) mg/g. Albuminuria improved in 77% and resolved in 51% of patients at long-term.

Conclusions: Bariatric surgery has a significantly positive impact on albuminuria in patients with obesity and type 2 diabetes. Our data showed almost an 80% improvement in albuminuria at the short- and long-term period after bariatric surgery.

Keyword: Albuminuria; Bariatric surgery; Diabetes; Gastric bypass; Nephropathy; Sleeve gastrectomy