

Does vitamin D deficiency negatively impact type 2 diabetes remission after bariatric surgery?

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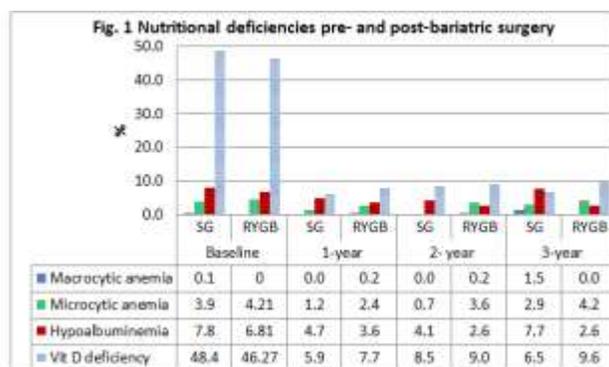
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Abstract

Introduction: Studies have suggested that vitamin D plays a role in glucose homeostasis; vitamin D deficiency (VDD) may be associated with lower rates of T2DM remission after surgery. This study aims to compare nutritional variables in sleeve (SG) and bypass surgery (RYGB) in type 2 diabetes mellitus (T2DM) patients, and analyze the relationship between vitamin D levels and T2DM remission post-operatively.

Methods: This retrospective study used data from the Ontario Bariatric Registry to determine the prevalence of VDD and T2DM remission after surgery, with analysis of the relationship between these outcomes and other variables during a 3-year follow-up.

Results: 6,433 T2DM patients underwent surgery (RYGB: 5,419, SG: 1,014) from January 2010 to September 2017 in Ontario. RYGB elicited more complete T2DM remission, 69.45% vs. 57.99% at 1-year, 70.77% vs. 57.04% at 2-year. At 3-year, rates were similar (66.13% and 69.23%) but groups were smaller. The prevalence of VDD (levels <50 nmol/L) was reduced at 3-year from baseline (46.6% to 9.3%). Only 20.13% had initially sufficient vitamin D levels (≥ 75 nmol/L) vs. 60% at 3-year. Patients with T2DM remission had less VDD at all time points. The rates of VDD seemed slightly higher in RYGB. The rates of other micronutrient deficiencies were low, with no relevant increase post-operatively (figure 1).



Conclusions: Vitamin D deficiency is prevalent among obese diabetic patients presenting for bariatric surgery. The postoperative management successfully addressed VDD following surgery; patients experiencing T2DM remission were less likely to be VDD. Further studies are needed to explore this relationship.