

Metabolic Benefits of Laparoscopic Gastrogastroic Fistula Repair after Roux-en-Y Gastric Bypass (RYGB)

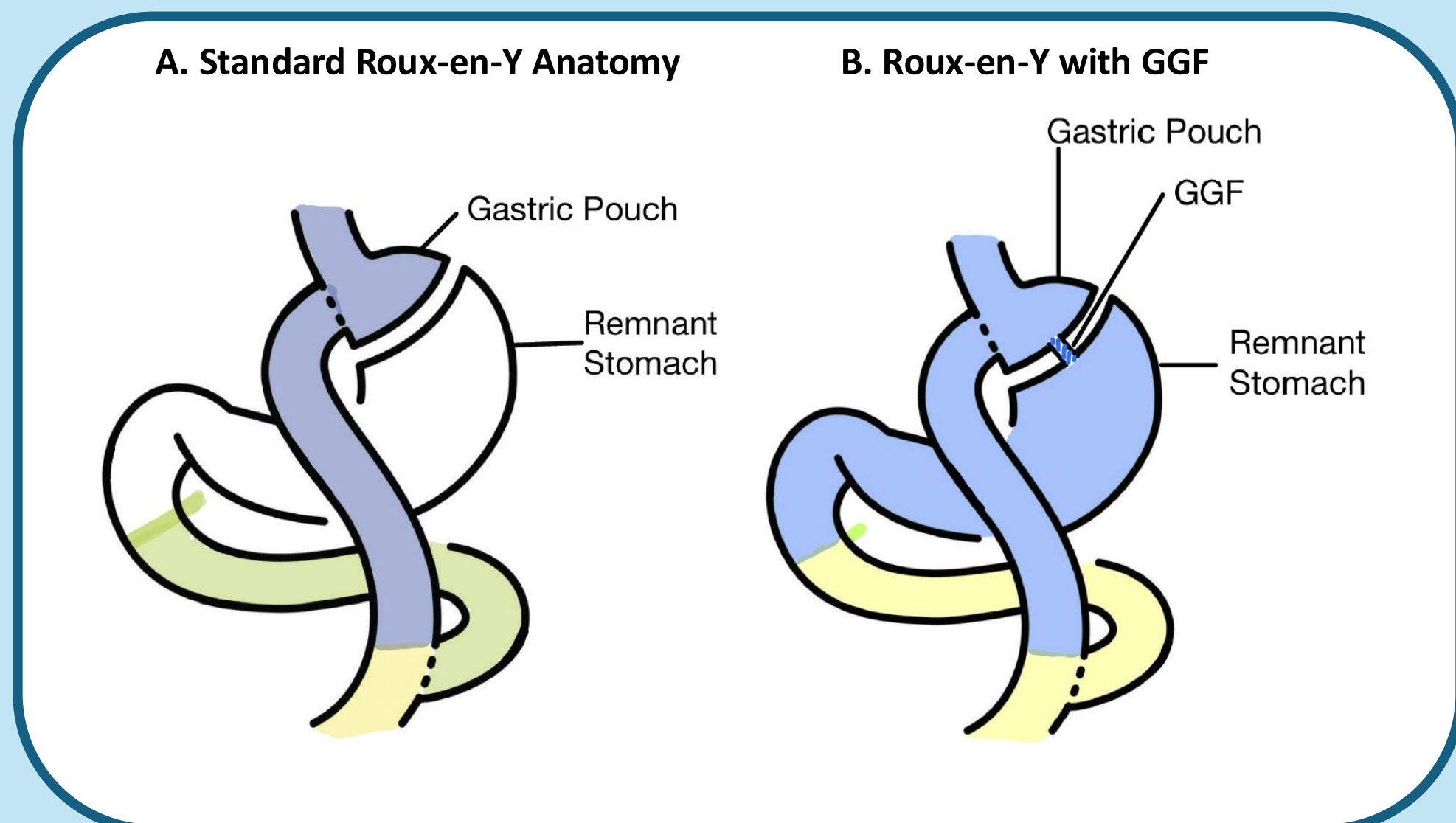
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Background

- Roux-en-Y Gastric Bypass (RYGB) offers durable weight loss and remission of Type II Diabetes (T2DM)
- Gastrogastroic fistula (GGF) is a rare postoperative complication of RYGB
 - Abnormally re-establishes connection between the new gastric pouch and excluded "remnant" stomach
 - Associated with weight regain and diabetes recurrence
- Surgical repair improves weight loss, however, metabolic benefits remain ill-defined

Figure 1. Background Illustration of GGF



Methods

- Multicenter retrospective cohort study of adults undergoing laparoscopic GGF repair at BWH or BWFH (2014-2024) with at least 12 months of follow-up
- Outcomes of interest: total weight loss (TWL%), HbA1c, cumulative fistula diameter and postoperative de-escalation of antidiabetic therapy

Figure 2. Laparoscopic GGF Repair is Associated with De-escalation of Antidiabetic Therapy

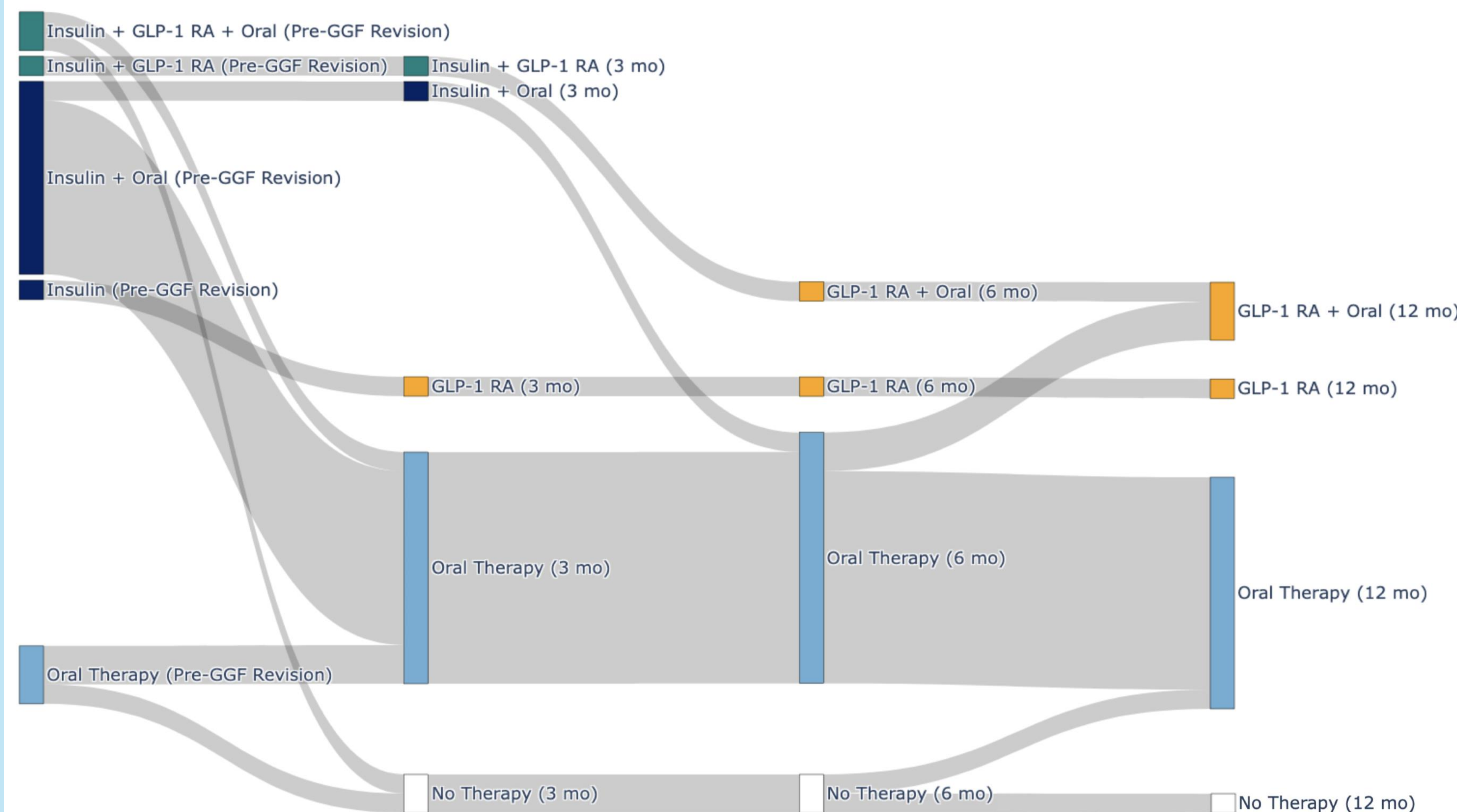
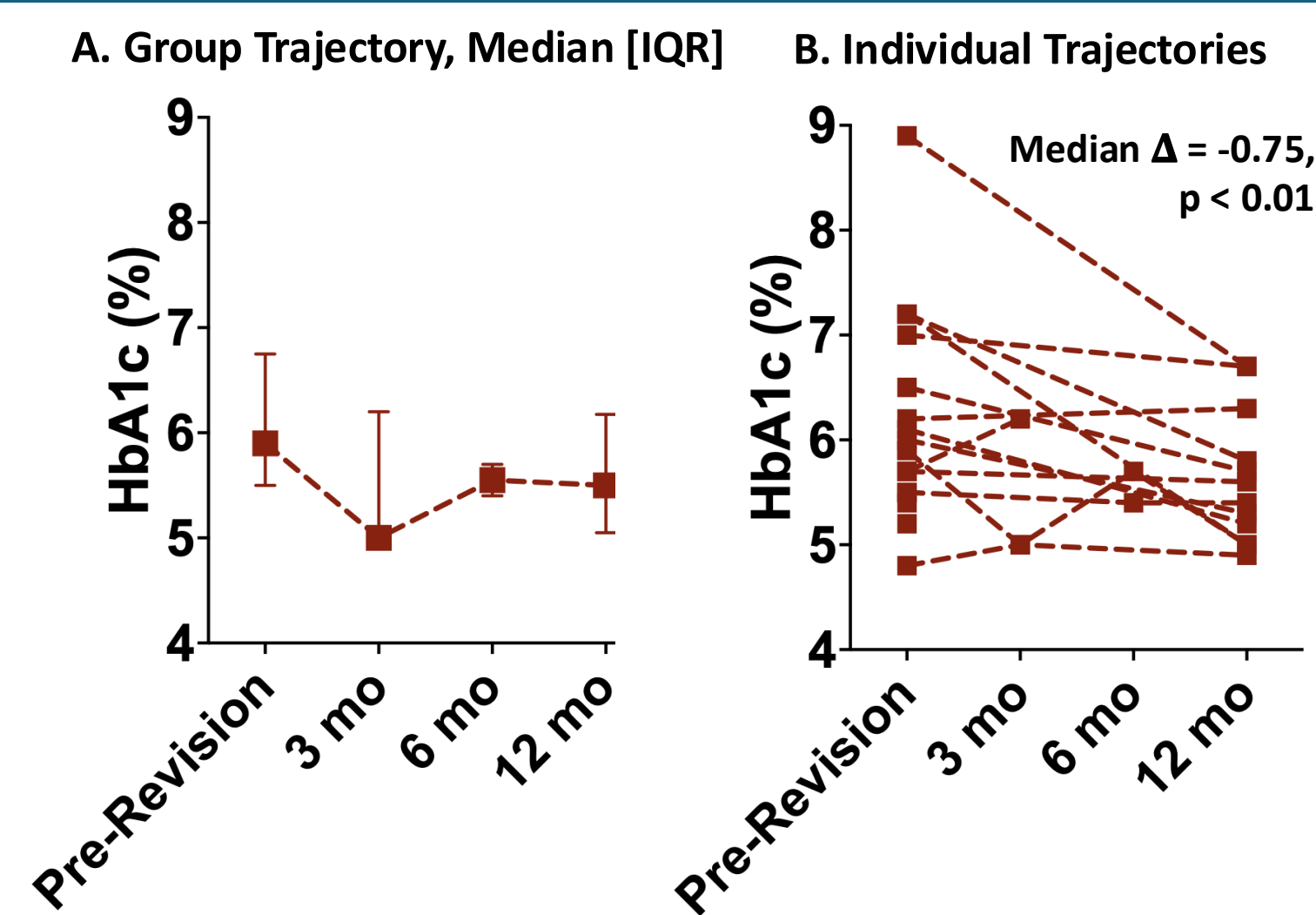


Table 1. Baseline Characteristics (N=43)

Age (years), mean (SD)	52.1 (9.0)
Female, n (%)	37 (86.0)
RYGB to GGF Time (years), mean (SD)	16.0 (6.5)
Open RYGB at Index Operation, n (%)	33 (76.7)
Previous Endoscopic Revision Attempt, n (%)	17 (39.5)
GLP-1 Receptor Agonist on Surgical Referral, n (%)	6 (14.0)
Cumulative Fistula Diameter (mm), median [IQR]	15.5 [12,20]
T2DM at on Surgical Referral for GGF, n (%)	17 (39.5)
Insulin-Dependent, n (%)	15 (88.2)
GLP-1 Receptor Agonist, n (%)	3 (17.6)
HbA1c, median [IQR]	5.9 [1.0]

Figure 3. Change in HbA1c among Diabetics



Results

- Identified 43 individuals with available follow-up
 - ~75% with previous open RYGB – known risk factor
 - ~40% with previous attempted endoscopic closure
 - ~40% with T2DM – majority insulin-dependent
- Significant de-escalation of antidiabetic therapy
 - 100% of diabetics liberated of insulin by 6 months
 - majority as early as 2 to 4 weeks postoperatively
 - Median 1-year Δ HbA1c of -0.75 [95%CI: -1.15, -0.1]
- Significant total body weight loss at 1-year
 - Mean 1-year TWL of 15.4% [95%CI: -20.1, -10.8%]
- Fistula size does not predict %TWL or Δ HbA1c
 - ($R^2 = 0.199$), ($R^2 = 0.127$) respectively

Discussion

- Re-establishment of connection between gastric pouch and remnant stomach by GGF has significant metabolic impact
- Laparoscopic GGF repair following RYGB offers significant weight loss and swift metabolic improvements
- Our study supports consideration of GGF repair for RYGB patients with recurrent weight gain or diabetes – irrespective of fistula size – even decades following index operation