

p=0.0042). The baseline values for the other parameters including body weight, waist circumference, Diastolic BP, Alanine transaminase (ALT), Gamma-glutamyl transferase (GGT), eGFR, WBC, Platelet, Globulin, ESR, demonstrated a clinically relevant, superior change

Discussion: The initial analysis for the prospectively designed trial reveals a remarkable improvement in the clinical and the biochemical parameters that would determine the complete and the prolonged remission of diabetes. The initial results are an early indicator for the translation of the scientific rationale for the technological intervention, through digital twin technology, powered by Internet of Things (IoT) and Artificial Intelligence (AI), as a modality to enable reversal of diabetes into an achievable outcome that would be durable. The impactful glycemic control appears to have positive meaningful metabolic health consequences

Trial Registration: The trial has been prospectively registered in Clinical Trial Registry – India: Reference no. CTRI/2020/08/027072 on August 10, 2020

Diabetes Mellitus and Glucose Metabolism

TYPE 2 DIABETES

Role of Bariatric Surgery in Managing Metabolic Syndrome

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Background: Lifestyle modifications provide a limited control of diabetes mellitus type 2 (DM2), especially in patients with morbid obesity and uncontrolled DM. Compared with non-surgical treatment, bariatric surgery achieved more sustained weight loss and higher remission rates of DM2. Roux-en-Y gastric bypass (RYGB) has been the most common procedure in the past but sleeve gastrectomy (SG) with duodenal switch (DS) is gaining more popularity now.

Objective: To compare the significant differences in the outcomes of these procedures; such as the reduction in hemoglobin A1c (HbA1c), weight, basic metabolic index (BMI) and atherosclerotic cardiovascular disease (ASCVD) risk score of the patients at our community hospital.

Methods: This was a retrospective observational study consisting of a chart review of 151 patients during 2016 to 2019. Patients included were >18 years old, and underwent one of the three types of bariatric surgeries, including RYGB, SG and sleeve with DS. Comparison between different continuous variables was made using analysis of variance. Chi square analysis was used to determine associations between different outcomes and various categorical variables.

Results: Among all, 33.1% had SG, 33.8% had RYGB and 33.1% had DS. The median age was 66 years and 71.5% were females. Median height was 63 inches. 84.8% were white, 14.6% were African American and 0.7% were Asian. The associated comorbidities were asthma, hypertension, dyslipidemia, DM, smoking and coronary artery disease. Median weight prior to surgery was 280 pounds (lb) and reduced to a median weight of 240 lb. Median BMI before surgery was 44 kg/m² and reduced to 39 kg/m². Median blood pressure (BP) was 128/74 mmHg and reduced to 120/68 mmHg. Patients with elevated BP reduced from 70% to 20% in SG, 66.7% to 49%

in RYGB and 82% to 54% in DS. Fasting blood sugar reduced from a median of 98 mg/dl to 87 mg/dl. HbA1c reduced from a median of 6 to 5.4. ASCVD risk score reduced from 4 to 2. Mean difference in HbA1c reduction was 0.81 for SG, 1.44 for RYGB and 2.19 for DS. Prior to surgery, 43% patients had DM, 16.6% had prediabetes and 40.4% were nondiabetic. Three months later, patients with DM2 reduced to 14.8% and prediabetes reduced to 10.7%. Patients with DM in SG group reduced from 14% to 12.2% and prediabetics reduced from 12 to 6%. In RYGB group, DM reduced from 56.9% to 16% and prediabetics increased from 13.7% to 24%. In DS group, DM reduced from 58% to 16% and prediabetics reduced from 24% to 2%. Insulin users reduced from 4% to 2% in SG, 21.6% to 3.9% in RYGB and 22% to 6% in DS. Median number of DM2 medications reduced from 1 to 0.

Conclusion: Our study demonstrates the differences in the reduction of HbA1c, weight, BMI and ASCVD risk score among various bariatric surgery procedures. It suggests that DS leads to a greater reduction in the HbA1c and ASCVD risk scores as compared to RYGB, although the risks of malabsorption complications are considerable.

Diabetes Mellitus and Glucose Metabolism

TYPE 2 DIABETES

Screening for Diabetes-Related Distress in an Outpatient Endocrine Clinic

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Background: Identification and treatment of diabetes-related distress (DD) are essential for diabetes management, quality of life, and reducing health care costs for people with diabetes. There is no standardized workflow for DD screening in an outpatient endocrine clinic that manages approximately 2000 persons with diabetes.

Aim: This quality improvement (QI) project aims to implement a DD screening and referral program in an outpatient endocrine clinic.

Methods: The Mobilize, Assess, Plan, Implement, Track (MAP-IT) model was used to design the QI project. Patients without a diagnosis of diabetes, age less than 18 years, and pregnant women were excluded from the screening. DD was measured using the Problem Areas in Diabetes-5 (PAID-5) scale (0 - 20) points (1). An ambulatory systems analyst created a flowsheet in Epic for the PAID-5 questionnaire and routed the PAID-5 to MyChart. During the implementation phase, patients completed the PAID-5 on MyChart one week before their appointment or in-person during the encounter. Providers referred patients with a PAID-5 score ≥ 8 to a mental health provider (MHP). The primary outcomes were PAID-5 screening compliance and mental health referral compliance. Secondary outcomes include PAID-5 scores and hemoglobin A1C value percentage; changes in the PAID-5 scores and A1C values were compared pre- and post-intervention.

Results: The project was implemented on August 31st, 2020. As of October 29th, 2020, the PAID-5 screening compliance was 66% (n = 385/585). The patient sample was