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Duodenal resurfacing procedure: A novel approach for type 2 diabetes management

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Bariatric surgery has emerged as an effective intervention to treat obesity and its related co morbidities. For multitude of factors, access, insurance, patient fears, referrals and the procedures risks, only 1% of the eligible undergoes bariatric surgery. Considerable needs for effective nonsurgical treatment modalities are mandated. The minimally invasive novel endoscopic therapies with less morbidity could be the answer for many morbidly obese patients. Researches advocate the important role of the foregut in the regulation of glucose homeostasis and diabetes. A novel purely endoscopic catheter-based procedure that targets the duodenal mucosa had been developed by Fractyl Laboratories targeting the abnormal hypertrophy and hyperplasia and the alterations in the enteroendocrine cells of the foregut usually seen in patients with diabetes. This minimally invasive Duodenal Mucosal Resurfacing System DMR is known as Revita. Revita involves two main steps: First, creation of a protective barrier by lifting the sub mucosal space of the duodenum with endoscopic injection of saline and second, hydrothermal ablation (recirculation of hot water within a balloon tipped catheter) of the circumferential duodenal mucosa. This rejuvenation of the lining of the duodenum will change gut signaling in patients with metabolic diseases caused by insulin resistance. The early results with Revita DMR are quite encouraging, with well tolerated procedure, concerning safety, three instances of duodenal stenosis were reported, and treated using endoscopic balloon dilation. The first study involving 39 T2 DM who were failing oral medications, at six months, the treatment had improved glycemic control, with significant decrease in FBG, PPG, and HbA1c. The patients receiving DMR on a long segment (average ¼ 9.3 cm, n ¼ 28) compared to short (average 3.4 cm, n ¼ 11) of the duodenum experienced a greater reduction in HbA1c levels at three months and achieved a reduction in HbA1c levels from 8.5% to 7.1% at six months and about five pounds of weight loss. Further studies are necessary to understand the core mechanism, long-term safety, efficacy, durability and how the procedure performs in a randomized clinical trial setting, while also embracing the potential for wider metabolic benefits.

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