DO IMPROVEMENTS IN METABOLIC SYNDROME POST BARIATRIC CARE ASSOCIATED WITH BETTER ORAL HEALTH?

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Background: Obesity and diabetes may predispose to periodontal disease (PD) which is a polymicrobial inflammatory disorder destructing periodontium and promoting chronic systemic inflammation. Proposed mechanisms are increased salivary glucose level from hyperglycemia and hyposalivation, with both affecting the oral microbiome. Bariatric surgery is an effective treatment for obesity with improvements in body weight and insulin sensitivity. Bariatric care protocol also includes a very low calorie diet (VLCD) with Optifast®, used for 2-3 weeks pre-op to facilitate laparoscopic access. VLCD can also reduce weight and blood glucose.

Aims: This study aims to determine the effect of the bariatric protocol (pre-bariatric VLCD and bariatric surgery) on oral inflammatory load (OIL), a surrogate marker for PD, and stimulated salivary flow rate (SFR) in obese patients.

Methods: Patients were recruited from the Toronto Western Hospital. Sample collection took place at 3 time-points: pre-VLCD, post-VLCD (surgery day) and 1-month post-surgery. A 30-second mouth rinse was collected to determine neutrophils count using hemocytometer. Subjects were asked to chew on a piece of parafilm to determine salivary flow rate. Blood tests were performed to measure fasting insulin, glucose, and HbA1c. Anthropometric measurements including height, weight, and body mass index (BMI) were measured. Results are expressed as mean ± SD.

Results: Twenty patients (18 females, 2 male) were recruited of which 4 were diabetic. Mean age of the patients was 50.5 ± 8.6 years, and BMI was 46.4 ± 5.4 kg/m². The mean VLCD duration was 16.7 ± 3.5 days. At baseline, 3 patients, assessed by OIL, were diagnosed with PD and one patient had SFR < 0.5ml/min. Overall, weight and blood tests significantly improved after VLCD except for HbA1c (BMI P < 0.001, Glucose P= 0.016, insulin P= 0.013, HOMA-IR P= 0.016). Additionally, parameters significantly improved 1-month post-surgery compare to baseline (Glucose P= 0.004, insulin P= 0.008, HOMA-IR P= 0.009, HbA1c P= 0.001, BMI P <0.001). During the bariatric care protocol, the changes of oral measurements were not statistically significant (OIL P= 0.316, SFR P= 0.588).

Conclusions: These results suggest that both VLCD and bariatric surgery improve glucose metabolism and weight. However, these preliminary results do not suggest that the bariatric care protocol has a significant impact on oral parameters.

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