

# Micronutrients status in bariatric patients- middle term follow-up for Sleeve Gastrectomy

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## Introduction

Candidates for bariatric surgery are often malnourished despite an overconsumption of calories, and obesity is a known risk factor for nutrient deficiency.[1]

Due to inadequate intake and uptake of micronutrients, patients who underwent LSG are at serious risk for developing micronutrient deficiencies. [3]

Vitamin D deficiency is common with bariatric surgery, however, daily supplementation reduced the rates of deficiency.[2]

## Objectives

Sleeve gastrectomy is a highly effective bariatric technique for morbidly obese patients thus nutritional deficiencies resulting need routine screening for proper evaluation.

Little is still known about the nutritional side-effects for this restrictive bariatric procedure and our study aims to evaluate the impact of sleeve gastrectomy on micronutrients status.

## Methods

Prospective study- 48 morbidly obese patients undergoing laparoscopic sleeve gastrectomy (LSG) between september 2013 and september 2014.

Lot characteristics: - mean age of 39.1 years

- mean BMI: 43.5 kg/m<sup>2</sup>.

Serum levels for nutritional parameters were evaluated :25OH vitamin D, Vitamin B12 and folic acid.

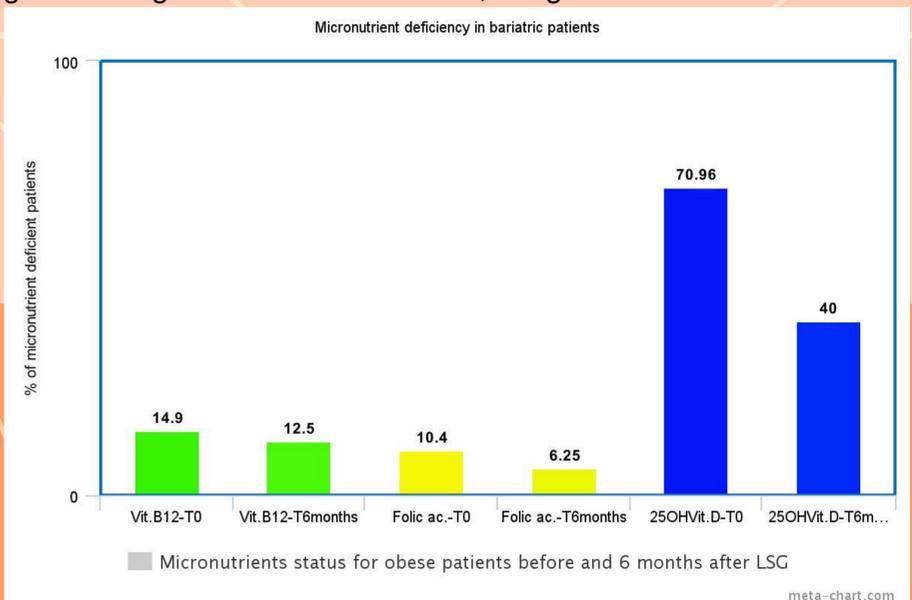
Baseline evaluation / 6 months post-bariatric surgery (available for 16 patients). Correction for nutritional deficiencies was realised, and supplementation continued after the bariatric procedure.

## Results

Nutrient	Mean value (To)	Mean value 6 months after LSG	% nutrient deficient patients (To)	% persistent deficiency-6 months after LSG
Vitamin B12 (N>193 pg/ml)	326	298,5	14,9	12,5
Folic Acid (N>3 ng/ml)	5,88	4,43	10,4	6,25
25 OH Vitamin D (N>30)	16,75	20,78	(<30) 90,32 (<20) 70,96	(<30) 53,33 (<20) 40

- Mean level of Vitamin B12 was stable: 326 pg/ml at baseline and 298,5pg/ml at the 6 months follow-up;
- Mean level of Folic acid at baseline: 5,88 ng/ml was maintained in the normal range (N>3 ng/ml) with minimal reduction at the 6 months evaluation : 4,43 ng/ml;
- The initial evaluation :average 25-hydroxy vitamin D (25OHD) level=16.75 ng/ml with significant correction to 20,78 ng/ml at the 6 months follow-up;

- ❖ **Vitamin B12** deficiency (<193 pg/ml) → 7/47(14,9%) patients ; 6 months post-bariatric surgery → deficiency in 2/16 (12,5%);
- ❖ **Folic acid** deficiency → 5/48 cases (10,4%) 6 months after bariatric surgery → 1/16 patients(6,25%) ;
- ❖ **Vitamin D insufficiency** (<30 ng/mL) 28/31 patients (90,32%), significantly improved to only 8/15(53,33%) 6 months after LSG.
- ❖ **Vitamin D deficiency** (<20 ng/mL) was objectified at baseline in 22/31 patients (70,96%) with resistant correction 6 months after LSG in 6/15(40%) patients.



## Conclusions

The level of nutrients was maintained at normal mean levels after sleeve gastrectomy and our preliminary data show the correction of nutrient deficiencies in most of the cases were possible in a short follow-up term (6 months).

Literature data shows encouraging nutritional profiles for patients after LSG compared to RYGBP, with fewer and less severe deficiencies.[2],[3] However proper monitoring, pre and post-operative micro-nutrient supplementation reduced the deficiency rates for bariatric surgery procedures, including LSG.[2]

## References:

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