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Do Roux-en-Y gastric bypass patients meet the dietary guidelines?

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From Genes and nutrition, is personalised nutrition the next realistic step?
Brussels, Belgium. 25 April 2014

Background

The prevalence of obesity has increased to epidemic proportions and, as a result, the number of bariatric surgeries has increased worldwide. To date, bariatric surgery remains the sole medical intervention that achieves considerable and sustained weight loss. As both obesity and bariatric surgery are associated with nutritional deficiencies, the aim of this study was to evaluate the dietary intake of macro- and micronutrients in patients before and after Roux-en-Y gastric bypass (RYGB).

Methods

A prospective observational study was performed at University Hospitals Leuven, Belgium. Patients com-

Table 1 Intake of macronutrients at different time-points, shown as mean±SD.

n=22	Intake pre-RYGB	Intake 1 month post-RYGB	Intake 3 months post-RYGB	Significance
Carbohydrates (g)	245.2±72.4	81.8±39.1	110.9±51.42	1,2
Proteins (g)	87.3±23.8	37.2±16.6	48.0±14.4	1,2,3
Fat (g)	92.2±40.4	20.5±12.6	36.3±16.2	1,2,3

1 p<0.01:pre-op vs post-op 1 month; 2 p<0.01:pre-op vs post-op 3 months; 3 p<0.01:post-op 1 month vs post-op 3 months

Table 2 Intake of micronutrients at different time-points, shown as mean±SD.

	Intake pre-RYGB (32 patients)	Intake 1 month post-RYGB (28 patients)	Intake 3 months post-RYGB (26 patients)	Significance
Ca (mg)	970.4±519.6	638.4±287.9	695.1±352.3	
Fe (mg)	12.6±3.7	5±2.9	6.0±1.8	1,2
Cu (mg)	2.1±1.5	1.0±0.9	4.9±18.6	
Zn (mg)	46.6±92.1	10.2±21.1	6.6±3.7	
Vitamin A (µg)	962.8±405.2	721.5±490.0	787.5±716.6	
Vitamin B1 (mg)	1.7±0.7	0.6±0.3	0.8±0.3	1,2
Vitamin B12 (µg)	5.4±2.5	2.3±1.5	3.3±1.8	1,2
Vitamin C (mg)	138.9±83.8	70.3±56.7	85.1±52.2	1,2
Vitamin D (µg)	8.4±5.1	5.2±3.3	4.2±3.2	

1 p<0.01:pre-op vs post-op 1 month; 2 p<0.01:pre-op vs post-op 3 months; 3 p<0.01:post-op 1 month vs post-op 3 months

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pleted a dietary record of two non-consecutive days before RYGB and 1 and 3 months after RYGB. Intake of macronutrients and micronutrients was calculated for the different time-points. Paired sample t-tests were performed to analyse differences between time-points.

Results

Conclusions

The intake of macro- and micronutrients is markedly decreased one month after RYGB. At three months post-surgery, the intake of macronutrient increases, but the micronutrient intake remains identical at a worryingly low level. Our data clearly suggest that nutritional guidance is essential following bariatric surgery.

Trial registration

Clinicaltrials.gov #NCT01571180.

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