Ventilatory anaerobic threshold six months after RYGB

Polovina S[1], Nedeljković I[2,3], Bajec Dj[2, 4], Šumarac-Dumanović M[1, 2], Radenković D[2, 4], Kendereški A[1, 2], Gregorić P[2, 5], Cvijovic G [1], Micic D[5], Stamenković-Pejković D[1], Zoric S [1], Jeremić D[1], Gligić A[1], Micic D[2].

Clinic for endocrinology, diabetes and diseases of metabolism, Clinical Center of Serbia[1].
School of Medicine, University of Belgrade, Serbia[2]
Clinic for cardiology, Clinical Center of Serbia[3]
Emergency center, Clinical Center of Serbia[5]

OBJECTIVES

Obesity is associated with high risk for coronary artery disease, high blood pressure, elevated serum cholesterol level, malignancy and Type 2 diabetes mellitus.
After weight loss, especially after bariatric surgery there is improvement in blood pressure, metabolic parameters and ventilatory anaerobic threshold.

METHODS

Ergospirometry (Shiller CS-200, Bruce protocol) was performed in 50 obese patients before and six months after R en Y gastric bypass.
Baseline characteristics were:
BMI 43.8kg/m2, females n=37, males n=13.

Changes in pulse rate, systolic blood pressure (SBP) in rest and maximal SBP, diastolic blood pressure in rest (DBP) and maximal DBP, ventilatory anaerobic threshold (VAT/VO2) and peak in oxygen consumption (VO2) were analyzed.

Baseline VO2 less than 14ml/kg/min was exclusion criteria for bariatric surgery

Graphs and tables

BP and pulse rate before and 6 months after RYGB

Parameter	Before	After	p
P in rest /min	**98,7 12,2**	**88,01 13,46**	**<0,0001**
Max P /min	**179 8**	**160 17**	**NS**
SBP in rest (mmHg)	**135 14**	**131 13**	**0,017**
Max SBP (mmHg)	**181 26**	**162 22**	**<0,0001**
DBP in rest (mmHg)	**85 8**	**80 9**	**<0,0001**
Max DBP (mmHg)	**98 12**	**92 10**	**0.002**

P=pulse rate, SBP= systolic blood pressure, DBP=diastolic blood pressure

RESULTS

Change in pulse rate (98,7±12,2 vs. 88,01±13,46/min;) was significant (p<0,0001).

SBP in rest decreased (135±14 vs. 131±13mmHg) with significance p=0,017. Max SBP decreased with high significance (181±26 vs. 162±22mmHg; p<0,0001).
DBP in rest also decreased (85±8 vs. 80±9mmHg; p<0,0001) and max DBP decreased from 98±12 to 92±10mmHg (p=0.002).

There was improvement in VAT/VO2 (17,8±3,44 vs. 20,86±4,70ml/kg/min; p<0.0001) and in peak of oxygen consumption, VO2 (20,79±3,63 vs.4,97±4,37ml/kg/min; p<0,0001).

CONCLUSIONS

Our results suggest that bariatric surgery could improve cardiorespiratory fitness. Ventilatory anaerobic threshold, oxygen consumption, pulse rate, maximal systolic and diastolic blood pressure as well as systolic and diastolic blood pressure in rest were improved six months after RYGB.

References

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