Ventilatory anaerobic threshold six months after RYGB

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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 Y gastric bypass. Baseline characteristics were: BMI 43.8 kg/m², females n=37, males n=13.

Changes in pulse rate, systolic blood pressure (SBP) in rest and maximal DBP, 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 14 ml/kg/min was exclusion criteria for bariatric surgery.

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±13 mmHg) with significance p=0.017. Max SBP decreased with high significance (181±26 vs. 162±22 mmHg; p<0.0001).

DBP in rest also decreased (85±8 vs. 80±9 mmHg; p<0.0001) and max DBP decreased from 98±12 to 92±10 mmHg (p=0.002).

There was improvement in VAT/VO2 (17.8±3.4 vs. 20.86±3.70 ml/kg/min; p<0.0001) and in peak of oxygen consumption, VO2 (20.79±3.63 vs. 4.97±4.37 ml/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