

## **ABSTRACT**

DOSBABA, Filip: Aerobic capacity in relation to risk factors ischemic heart disease.

**Aim:** of this diploma thesis was to evaluate the physiological effectiveness and influence of 12 week long rehabilitation program on development of oxygen transport system parameters ( $VO_{2maxSL}$ ,  $VO_{2maxSL}.kg^{-1}$ ,  $W_{maxSL}$ ,  $W_{maxSL}.kg^{-1}$ ,  $MET_{maxSL}$ ) and anthropometric parameters (m, BMI).

**Methods:** The study included 102 patients (90 % men), mean age  $59.3 \pm 8.9$  years, with a left ventricular ejection fraction  $55.3 \pm 6.0$  % after an acute coronary event. All patients completed 3 months aerobic-resistance training program with a frequency of sessions 3 times a week in 70 - 80 %  $VO_{2maxSL}$ . Training session lasted 105 minutes (including 60 minutes of own aerobic training on 1. ventilatory threshold).

**Results:** Completion of the intervention training program lead to a significant increase in work tolerance ( $158.6 \pm 31.3$  vs.  $190.5 \pm 34.8$  W;  $p < 0.01$ ) and peak oxygen consumption ( $20.5 \pm 4.0$  vs.  $24.6 \pm 4.0$  ml.min<sup>-1</sup>.kg<sup>-1</sup>,  $p < 0.01$ ) and metabolic equivalent of used energy ( $5.9 \pm 1.1$  vs.  $7 \pm 1.4$  J.min<sup>-1</sup>.kg<sup>-1</sup>,  $p < 0.01$ ). There was also observed a nonsignificant decrease in resting values of body mass index ( $27.5 \pm 3.2$  vs.  $27.0 \pm 3.6$  kg.m<sup>-2</sup>) and weight ( $89.8 \pm 12.7$  vs.  $89 \pm 12.3$  kg).

**Conclusion:** Intervention training program leads to improvements in aerobic capacity, which is one of the major prognostic factors in patients after acute coronary event.

**Keywords:** ischemic heart disease, combined training, aerobic capacity, risk factors, mortality