Effect of heparin infusion on free fatty acids and triglyceride level during submaximal exercise

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Abstract

**Background:** Fatty acids are an important source of energy for muscle contraction, particularly during longtime exercise. The objective of this clinical trial study was to determination effect of heparin infusion on lipids metabolism during submaximal exercise.

**Methods:** Forty boy students performed Astrand ergometry protocol for 20-minute on cycle ergometer in two separate occasions. Stage1 without any heparin administration and stage 2 with heparin (10000 U) and lactose infusion were performed in order of experimental and control groups 30-minute prior to test. A Blood sample was obtained immediately followed up exercise for purpose of plasma free fatty acid (FFA), triglyceride (TG) measurement. T test was used to determine significant differences between variables in two groups.

**Results:** Heparin infusion lead to significant increase in FFA and decrease in TG during exercise (P<0.05). The resting heart rate decreased and VO2max increased significantly in heparin infusion group (P<0.05). There were no significant changes of FFA or TG variables in lactose infusion control group.

**Conclusion:** Heparin infusion leads to increase in fat oxidation substrates and aerobic capacity that probably associated with decreasing in glucose consumption and carbohydrate oxidation. Simultaneous measurement of FFA and carbohydrate oxidation substrates is necessary to determine precise effect of heparin on endurance performance during exercise.

**Key words:** heparin, free fatty acids, triglyceride, exercise, endurance performance

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