



Effect of Strength Endurance Load on Heart Rate and Blood Lactate

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Abstract

Background: Circuit strength endurance and rowing exercise are common resistance training mode, but the different resistance load of acute response were unclear.

Purpose: to investigate circuit strength endurance and high intensity row exercise on heart rate and lactate in acute response.

Methods: 8 male PE students were randomly assigned to circuit strength endurance (3x20 RM, 1RM 40%, rest 60s; 4 upper and 4 lower exercise) and rowing load (3x500m, Watt_{max} 80%, Level 10, set 90s). Lactate (La) and heart rate (HR) were monitored before, during, and after load. Significant differences were tested using paired t tests.

Results: HR during row load (1x, 2x, 3x) were slightly higher than circuit strength endurance exercise. Meanwhile, the La during circuit strength endurance exercise were lower than row load. There were no significant difference in both La and HR.

Result : The heart rate of Circuit strength endurance in set-1(1x) was $156 \pm 16 \text{ min}^{-1}$, set-3 (3x) was $175 \pm 18 \text{ min}^{-1}$; of rowing the in 1x and 3x the average was $163 \pm 20 \text{ min}^{-1}$ and $176 \pm 24 \text{ min}^{-1}$. The heart rate Difference between Two kinds of training in 1x was 7 min^{-1} ($p > 0.05$), and 1 min^{-1} in 3x. they were no significant difference ($p > 0.05$).

Conclusion: The acute response of La to circuit strength endurance and HR to row exercise may induced by difference exercise types. We suggest that the circuit strength endurance exercise may be useful in anaerobic endurance during preparation period.

Keywords: Muscular endurance, row ergometer, heart rate, lactic acid