

Hyperthermia don't affect hydric status of acclimatized cyclists on the self-pace submaximal exercise

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Introduction

Training acclimatization has been reported as a positive component focused on decrement of negative effects, caused by hyperthermia, on endurance exercise performance (Lorenzo et al., 1985, *Journal Applied Physiology* 109, 1140-1147/ Cheung, 2007, *Applied Physiology, Nutrition, and Metabolism*, 32, 808-817). However, few investigations have been made about hydric effects on this performance on submaximal exercise controlled by ratings of perceived exertion (RPE).

Purpose

To verify if a hyperthermia modifies the urinary density (UD), body mass (BM) and time to complete (TC) 20-km self-pace cycling (TT20km) with intensity fixed in 16 points of RPE.

Methods

With institutional ethics approval and after evaluation of healthy, ten experienced and acclimatized amateur cyclists (mean age: 32,9 ± 4,82 years; stature: 1,75 ± 0,7 meters) (mean ± s) performed one familiarization session, and two TT20km in control condition with 21 °C (CON) and experimental condition with 33 °C (EXP) in randomized order. The normality of the data was evaluated Shapiro-Wilk Test and in order to test our hypothesis, paired t-Test was carried out.

Results

the UD and BM were measured before and immediately after exercises. The results of DU did not differ between conditions (e.g. t., P = 0.307) although of an average reduction of 36.36% after exercise. For BM, it occurred the same (e.g. t., P = 0.295) despite the percentage difference of 1.23%. TC also not differ (e.g. t., P = 0.314) between conditions (CON = 2064.40 ± 117.99 sec; EXP = 2097.40 ± 86.04 sec).

Conclusions

The results suggest that hyperthermia don't exerts negative influence over hydric status of acclimatized athletes, after ~ 30 min of submaximal 20-km self-pace cycling controlled by fixed perceived exertion

Key words: hyperthermia, urinary density, exercise capacity, perception of effort

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