Effect of Inhaling Canned Oxygen on Core Temperature in Soccer Players under Hot Weather Conditions: 2125Board #96 May 30 8:00 AM - 9:30 AM

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E-28 Free Communication/Poster - Sport Physiology/Human Performance 1: MAY 30, 2008 7:30 AM - 12:30 PM ROOM: Hall B

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(No relationships reported)

PURPOSE: The aim of this investigation was to study the effect of inhaling canned oxygen on the core body temperature (T_c) during a soccer match played under hot weather conditions.

METHODS: T_c was studied during the half time interval and the second half of an official game of the Argentine Football Association (AFA), in 8 professional male field players (age = 24.0 ± 2.8 yr, BMI = 23.4 ± 1.0 kg/m^2; mean ± SD). The weather conditions during the test were: temperature = 35° C, humidity = 75%. At the end of the first half of the game, the players were randomly assigned to 1 of 3 treatment groups: group 1 inhaled canned oxygen (n = 3); group 2 inhaled placebo (n = 3); group 3 served as control (n = 2, as 1 of the 3 initial players left). Both the concentrated oxygen (95%) and the placebo were supplied during 4 s using a spray can. Tc was assessed at the end of the first half, and at the beginning, in the middle, and at the end of the second half of the game, by means of an ingestible telemetry sensor, and was monitored with a miniaturized ambulatory data recorder. All the players were hydrated in the half time interval and in the middle of the second half of the game. Treatment comparisons were made based on a linear mixed-effects model with repeated measures, with Individual as a random factor, the baseline value as a covariable, and a first-order autoregressive error structure.

RESULTS: The ad hoc test did not indicate significant differences between the players treated with oxygen and the rest (−0.52° C, p>0.05; 95% CI: −1.18 to 0.13). The F-test did not show significant differences between treatments (37.94°, 38.71° and 38.22° C, p>0.05; groups 1, 2 and 3, respectively). In the half time interval, the group treated with oxygen revealed the greatest decrease in T_c (1.84°, 1.03° and 0.87° C). However, this group showed the greatest increase in the first part of the second half of the game (1.55°, 0.82° and 0.35° C).

CONCLUSIONS: There were not clear evidences that inhaling canned oxygen influenced on T_c throughout the test. Possible short-time effects should be further investigated.

Got it, thanks!