

The effect of mild-pressure hyperbaric therapy (Oasis O2) on fatigue and oxidative stress

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ABSTRACT

Mild-pressure hyperbaric therapy (mHBT) has become increasingly popular among elite athletes and most recently among the general public yet there is very little scientific underpinnings on its therapeutic use. In this study, fifteen healthy volunteers (8 men, 7 women, mean age 29.7 ± 8.1 years) were exposed to 1.3 atmospheres absolute (ATA) for 40 minutes in a mild hyperbaric chamber called "Oasis O2" to determine the effect of ambient air at 1.3 ATA on oxidative stress, antioxidant potential, fatigue, and blood chemistry. Reactive oxygen metabolites (ROMs), an index of oxidative stress, significantly reduced by 11% ($p = 0.006$), while biological antioxidant potential (BAP), an index of antioxidant capacity, did not show a significant change ($p = 0.749$). WBC count significantly reduced by 10.4% ($p = 0.005$) whereas WBC differential did not show a marked change. The mean visual analog scale (VAS) score for fatigue significantly decreased from 5.0 to 2.1 ($p < 0.001$). Our findings suggest that mild-pressure hyperbaric therapy reduces oxidative stress as indicated by a significant decrease in serum ROM, and also helps improve fatigue as seen by a significant decrease in VAS fatigue scores.

Keywords: Mild-Pressure Hyperbaric Chamber; Oxidative Stress; Free Radicals; Reactive Oxygen Species (ROS)