Physiological response to 60 min steady walking at moderate altitude

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Abstract

The purpose of present study was clarified to the physiological response to walking for a long term at moderate altitude (1450m). The healthy 6 males participated experiment as a subject in this study. They performed walking of steady state velocity (80m/min) for 60min in either sea level (64m: SL) and moderate altitude (1450m; MA). Respiratory metabolism, heart rate (HR), perceived of exertion (RPE), arterial O_2 saturation (SpO_2), blood lactate (BLa) and blood glucose (BGlu) were measured during 60 min walking. SpO_2 was significantly lower in the MA than in the SL ($P<0.01$). HR, Oxygen uptake, and RPE did not differ between the two conditions. However, respiratory exchange ratio was significantly higher for MA than SL at the end of the walking test ($P<0.05$). Furthermore, BLa did not change after the walking test, but BGLu decreased significantly only in MA ($P<0.05$). It is concluded that physiological response in walking at moderate altitude showed energy supply was more dependent on the glycolytic system due to the influence of hypobaric hypoxia.