Influences of two high intensity interval exercise protocols on hemorheologic variables in overweight men

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This study determined the effects of two different high intensity interval exercise (HIIE) on the main determinants of blood fluidity. Ten overweight men (age, 26.3±1.7 yrs) completed two HIIE protocols on two separate occasions with one week intervening. The two HIIE encompassed performing: 1) 6 intervals, 2 min activity at 85% of VO2max and 2 min active recovery at 30% of VO2max (ratio 1 to 1), and 2) 6 intervals, 30 s activity at 110% of VO2max and 4 min active recovery at 40% of VO2max (ratio 1 to 8). Each exercise trial was followed by 30 min rest. Venous blood samples were obtained before exercise, immediately after exercise and after 30 min of recovery and analyzed for blood and plasma viscosity, fibrinogen and red blood cell indices. The HIIE protocol with lower intensity and shorter recovery (1 to 1) led to higher reduction in plasma volume changes (9.9% vs 5.7%) and more increases in blood viscosity and hematocrit than higher intensity and longer recovery (1 to 8) protocol (P<0.05). In addition, irrespective of the intensity, HIIE resulted in significant increases in these variables (P<0.05). However, fibrinogen concentration did not change significantly either in response to HIIE or in response to intensity (P>0.05). Since the protocol with higher intensity and longer recovery has not induced increments in hemorheological variables, it could be concluded that this protocol is safer than lower intensity with shorter recovery for overweight individuals to perform.