Upper and lower body interval exercise induce similar changes in the main determinants of blood fluidity in overweight individuals

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This study aimed to compare the changes in hemorheological variables following two acute upper and lower body interval exercise protocols. Twelve subjects (age, 32.9±7.07 yrs; BMI, 30.0±3.0 kg/m2) completed upper (arm cranking) and lower body (bicycle) interval exercise protocols on two separate occasions with one week intervening. After determining VO2max by using the specified protocols, subject performed interval exercise included 5 intervals of 2 min activity at 85% of VO2max and 4 min active recovery at 45% of VO2max (totally 30 min exercise). Two venous blood samples were obtained before and immediately after exercise and were analyzed for blood and plasma viscosity, RBC aggregation, RBC deformability, fibrinogen, and red blood cell indices. Interval exercise irrespective of its type affected on hematocrit, fibrinogen and plasma viscosity, but had no effect on blood viscosity, RBC aggregation and RBC deformability. When the responses to upper and lower body trials were compared only a significant difference was detected for plasma viscosity (P<0.05) Increases in plasma viscosity following lower body exercise was higher than that of upper body trial (P<0.05). However, for all other markers of blood fluidity no differences were detected (P>0.05). Therefore, it might be concluded that despite the differences in the amount of muscle involved in the activity, upper and lower body interval exercise result in similar hemorheological responses in overweight individuals.