ABSTRACT

The purpose of this study was to identify possible submaximal exercise acid-base and cardio-respiratory responses among the Mesomorphic-endomorph (MEN), Ectomorphic-mesomorph (EME) and Mesomorphic-ectomorph (MEC) athletes. For testing the hypothesis 30 University athletes age ranged from 18 to 25 years were selected by ten in each category (MEN = 10, EME = 10 and MEC = 10) by Heath-Carter anthropometric somatotype method. The subjects were experimented at rest (Pre) and post submaximal treadmill run with 5.5% inclination and speed at 12 km/hr for 6 minutes. Pre and Post submaximal exercise Heart Rate (HR), Respiratory Rate (RR), Core Temperature, Venous blood Sodium [Na⁺], Venous blood Potassium [K⁺] and Venous blood Chloride [Cl⁻] were measured and collected data were analysed by ANCOVA. Pre submaximal exercise results shows that there was no significant difference in HR, RR, Core Temperature, Venous blood Na⁺, K⁺ and Cl⁻. MEC athletes had significantly (P < 0.05) lesser pre exercise RR (14.2 +/- 2.2 breaths/min) and SBP (121.6 +/- 5.23 mmHg) than the MEN and EME athletes. Post submaximal results showed that the MEC athletes had significantly (P < 0.05) lower HR (162 +/- 7.89 beats / min) and RR (28 +/- 2.11 breaths / min), than the MEN and EME athletes. The post test submaximal results showed that there were no significant (P > 0.05) submaximal effect on core temperature and venous blood electrolytes. The post-test core temperature and venous blood electrolytes results also showed there was no significant (P > 0.05) difference among the somatotyped athletes. The finding was concluded that the MEC athletes were more efficient in circulatory and ventilatory measures than the MEN athletes and they were highly suitable for endurance events.