

Comparison of Cardiac output of Cricket Players of different Level of Participation before and after Step Test

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Abstract

Aims: The aim of the study was to compare the cardiac output of cricket players of different level of participation before and after step test. **Materials and Methods:** There was one hundred fifty (N=150) trained male cricketers between the ages of 15 and 25 years volunteered for this study. Blood pressure was recorded with a digital sphygmomanometer according to the standardized protocol recommended by World Health Organization. **Results:** The mean age, height weight and BMI (body mass index) of national level cricketer was 17.68±2.21 year, 175.32±7.34 cm, 66.89±8.48 kg and 21.85±3.35 kg/m² respectively. The mean age, height weight and BMI (body mass index) of state level cricketer was 17.49±2.79 year, 169.85±7.18 cm, 55.10±8.46 kg and 19.03±2.14 kg/m² respectively. The mean age, height weight and BMI (body mass index) of district level cricketer was 17.94±2.78 year, 171.22±7.04 cm, 56.28±9.49 kg and 19.14±2.77 kg/m² respectively. The mean age, height weight and BMI (body mass index) of university level cricketer was 24.50±0.57 year, 179.00±4.24 cm, 68.75±7.45 kg and 21.41±1.41 kg/m² respectively. The mean age, height weight and BMI (body mass index) of school cricketer was 17.38±2.01 year, 170.06±7.67 cm, 55.69±7.98 kg and 19.21±2.03 kg/m² respectively. The mean cardiac output (resting) of national level, state level, district level, university level and school level cricket players was 5.94±1.25 (L/min), 6.06±1.20 (L/min), 6.29±0.97 (L/min), 5.70±0.83 (L/min) and 6.37±1.06 (L/min) respectively. The mean cardiac output (after Queen's step test) of national level, state level, district level, university level and school level cricket players was 11.47±2.06 (L/min), 10.74±2.24 (L/min), 10.55±1.61 (L/min), 8.33±0.88 (L/min) and 11.56±1.85 (L/min) respectively. **Conclusion:** It was concluded that the cardiac output was statistical significantly increased after step test than at rest of cricket players of different level of participation. There was a statistical significant difference in the variance of mean cardiac output (after Queen's step test) of national level, state level, district level, university level and school level cricket players.

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Introduction

Nowadays cricketers endure extreme training to be in highest state of physical fitness. Cardiac output (CO) is the quantity of blood or volume of blood that is pumped by the heart per minute. Cardiac output is a function of heart rate and stroke volume (Hussien et al. 2011). It is the product of stroke volume (SV; the volume of blood ejected from the heart in a single beat) and heart rate