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A Study of Nerve Conduction Velocity in Athletes

Abstract

Aim-The aim of the study was to study motor nerve conduction velocity (MNCV) in male athletes of aerobic group, anaerobic group & mixed group, compare the MNCV of athletes of different groups with control group and to study the relationship (if any) of selected anthropometric variables with MNCV. Methodology-The study was conducted on two hundred subjects out of whom one hundred fifty was male athletes (of university/college level participation) of different sports/games and fifty non athletes aged between 18-25 years. The athletes were divided into following groups on the basis of their predominant energy system: (a) Aerobic group was comprised of long distance runners, cyclists (b) Anaerobic group was comprised of sprinters, weight Lifters (c) Mixed group was comprised of hockey players, football players, volleyball players. As per the aims of the study, the subjects were tested for their motor nerve conduction velocity of the selected nerves of upper extremity (radial & ulnar nerve) and lower extremity (common peroneal & sural nerve) and anthropometric variables (body segment length/& breadth and circumference). Statistics were performed using the statistical functions in SPSS version 10.0 (free trial SPSS Inc. Chicago IL). Data was statistically evaluated with Means ± SD, Correlation (Pearson), ANOVA (one way) and Post hoc (Scheffe) test. Significance was set at the $p < 0.05$ level. Results- The values of anthropometric variables like segment lengths/breadths and circumferences of athletes were found higher than non-athlete. Further, the athletes of anaerobic group on an average exhibit greater values of anthropometric variables as compared to athletes of other groups. The mean values of various circumferences of right side of the subject were slightly greater than the left in all the groups. It was found that athletes exhibit higher values of motor nerve conduction velocity (MNCV) than nonathletes. Further, the subjects of anaerobic group exhibit greater values of motor nerve conduction velocity as compared to athletes of other groups. The mean values of MNCV of various nerves of right side of the subject were slightly greater than the left in all the groups. A significant difference was found when control group was compared with different groups of athletes for MNCV and various anthropometric variables. Conclusion-it was concluded that athletes demonstrate better anthropometric and neurophysiologic capabilities than the non-athletes which may be due to their training programme and these variables assume significance during the performance of athletes. The results of the present study may give explanations how to improve athletic performance by optimizing the function of nervous system.