



Acute Effects of Continuous Running and Intermittent Training Programmes on Selected Biochemical Factors of Professional College Men Athletes

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ABSTRACT

Aim of the study was to find out the acute effects of continuous running and intermittent training programmes on selected bi-chemical factors of professional college men athletes. The study was conducted on forty five men (N=45) engineering students from Pavendar Bharathidasan Institute of Engineering and Technology, Tiruchirappalli were randomly selected as subjects. They were randomly assigned equally into three groups, Group –I underwent Continuous Running Group (n = 15), Group II underwent Intermittent Training Group (n=15) and Group-III acted as control Group (n=15). HDL Cholesterol was selected as creation variable and it was assessed by Blood sample tests. The training period was limited to 12 weeks. The experimental groups underwent their respective training period for 12 weeks and the control group was acted as control. The pre and post test data were collected period and immediately after the training period of 12 weeks duration. The data was collected from the Experimental and Control Groups were statically examined with Analysis of covariance (ANCOVA). To determine the paired means significant difference, the Scheffe's test was applied as Post hoc test. In all cases 0.05 level of confidence was fixed to test the significant differences. HDL Cholesterol showed significant difference among the groups. The results of the study showed Intermittent training group is better than continuous running group and control group.

KEYWORDS : Continuous running, Intermittent training, HDL cholesterol

INTRODUCTION

Sports training are a conscious human activity; also it is a goal oriented activity. Sports training are the basic form of an athlete's training. It is the preparation of athletes with the help of systematically organized exercise which in fact based pedagogic principals. Sports training are a continuous and regular process. It is a mixture of general and specific means and methods of training. It aims to improve the performance of sports persons through physical fitness or conditions, technical skill, tactical efficiency and education. Physical fitness is sum total of strength, speed endurance, flexibility and co-ordinate abilities. Each sport requires a different type and level of physical condition and as a result a different type of fitness training is required for different sports. Technical skills are also important for improving the sports performance through economy and efficiency of movement.

Continuous training is a type of physical training that involves activity without rest. This type of training may be of high intensity, of moderate intensity with an extended duration, or fartlek training.

Continuous training means the person training uses 60-80% of their maximum heart rate for at least 30-60 minutes at least four or five times a week. This method suits long distance runners as well as tennis players etc, because it means that their endurance levels will increase, and it is the way which they would normally compete. Continuous training is a good way for an athlete to build up their cardio-vascular endurance levels. Continuous forms the basis for all other training methods both anaerobic and aerobic.

Continuous training is when an athlete exercises in a steady aerobic way and interval training is characterized by repetitions of work with a recovery period following each repetition (Continuous training ,wikipedia.org)

Interval training has been the basis for athletic training routines for years. The first forms of interval training, called 'Fartlek' involved alternating short, fast bursts of intensive exercise with slow, easy activity. Fartlek was casual, unstructured training that perfectly fit its English translation: "Speed play."

The interval programs of today have become highly sophisticated methods of structured training for athletic performance enhancement. Physiologists and trainers have designed interval programs that are specifically suited to individual athletes. These sessions include precisely measured intervals that match the athlete's sport, event and current level of conditioning. Often the appropriate intensity and duration of

the intervals is determined by the results of anaerobic threshold testing (AT) that includes measuring the blood-lactate of an athlete during intense exercise.

METHODOLOGY

The study was conducted on forty five men (N=45) engineering students from Pavendar Bharathidasan Institute of Engineering and Technology, Tiruchirappalli were randomly selected as subjects. They were randomly assigned equally into three groups, Group –I underwent Continuous Running Group (n = 15), Group II underwent Intermittent Training Group (n=15) and Group-III acted as Control Group (n=15). HDL Cholesterol was selected as creation variable and it was assessed by blood sample test. The training period was limited to 12 weeks. The experimental groups underwent their respective training period for 12 weeks and the control group was acted as control. The pre and post test data were collected period and immediately after the training period of 12 weeks duration.

RESULTS AND DISCUSSION

The data collected from the experimental group and control group prior and after experimentation on selected variable were statistically examined by analysis of covariance (ANCOVA) was used to determine differences, if any among the adjusted post test means on selected criterion variables separately. The Scheffe's test was applied as Post hoc test. The level of significance was fixed at 0.05 level of confidence to test the 'f' ratio obtained by analysis of covariance.

HDL Cholesterol

The Analysis of covariance (ANCOVA) on HDL Cholesterol of Continuous Running Group, Intermittent Training Group and Control Group, have been analyzed and presented in Table -I.

Table - I
Analysis of Covariance on HDL Cholesterol for Continuous Running Group, Intermittent Training Group and Control Group

Adjusted Post-test Means			of Source Variance	of Sum Squares	df	Mean Squares	'F' Ratio
Continuous Running Group	Intermittent Training Group	Control Group					

46.27	49.89	40.83	Between	603.51	2	301.76	45.38*
			With in	272.67	41	6.65	

*** Significant at .05 level of confidence (HDL Cholesterol Scores in Seconds) (The table value required for Significance at .05 level with df 2 and 41 is 3.23)**

Table I shows that the adjusted post test mean value of HDL Cholesterol for Continuous Running Group, Intermittent Training Group and Control Group are 46.27, 49.89 and 40.83 respectively. The obtained F-ratio of 45.38 for adjusted post test mean is more than the table value of 3.23 for df 2 and 41 required for significant at .05 level of confidence.

The results of the study indicate that there are significant differences among the adjusted post test means of Continuous Running Group, Intermittent Training Group and Control Group on the development of HDL Cholesterol.

To determine which of the paired means had a significant difference, the Scheffe's test was applied as Post hoc test and the results are presented in Table II.

**Table - II
The Scheffe's test for the Differences between the Adjusted Post test Paired Means on HDL Cholesterol**

Adjusted Post-test means			Mean Difference	Confidence Interval
Continuous Running Group	Intermittent Training Group	Control Group		
46.27	49.89		3.62*	0.19
46.27		40.83	5.44*	0.19
	49.89	40.83	9.06*	0.19

*** Significant at .05 level of confidence**

Table II shows that the adjusted post test mean difference on Continuous Running Group and Intermittent Training Group, Continuous Running Group and Control Group and Intermittent Training Group and Control group were 3.62, 5.44 and 9.06 respectively. The values are greater than the confidence interval value 0.19, which shows significant differences at 0.05 level of confidence.

It may be concluded from the results of the study that there is a significant difference in HDL Cholesterol between the adjusted post test means of Continuous Running Group and Intermittent Training Group, Continuous Running Group and Control Group and Intermittent Training Group and Control group. However, the improvements of HDL Cholesterol were significantly lower for Intermittent Training Group than Continuous Running Group and Control Group.

RESULTS AND DISCUSSION

The results of the study indicate that all the experimental groups-namely continuous running group and intermittent training group had significantly improved in the selected dependent biochemical variables namely HDL cholesterol. It is also found that the improvement effected by intermittent training group was greater when compared to the effects other Experimental groups.

Zmuda et al (1998) pointed out the ability to increase HDL Cholesterol levels through endurance training was limited in subjects with low initial HDL cholesterol. Physical Exercise increased in HDL and decreased in LDL cholesterol and triglycerides (Kalaustian, 2001).

CONCLUSIONS:

1. The results of the study showed that there is a significant difference among the groups.
2. It may be concluded that Intermittent Training Group is better than Continuous Running Group and Control Group in improving HDL Cholesterol.

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