

Comparison of the Initial State of Active and Passive on the Relative Peak Anaerobic Power and Blood Lactate Elite Handball Players

Gholamhasan jafarzadeh¹, Mohammad Nasiri²

¹Behbahan KhatamAlania University of Technology, Iran

²Department of Physical Education and Sport Science, Khoys branch, Islamic Azad University, Khoys, Iran

Corresponding Author: Gholamhasan.jafarzade@yahoo.com; Mobile:+98 9169714048

Abstract: The purpose of this study and compared to the initial state of active and passive on aerobic power of maximal relativity and elite handball players' blood lactate. Quasi-experimental and experimental research is done. Statistical research, which Behbahan city's elite society Handball players selectively between the desires to cooperate with the plan was formed. The statistical study sample included 20 patients randomly assigned to two groups to be the primary mode of active (AR) and passive (PR) are divided. Three bouts of 2 minutes each Wingate test with 15 minutes played back to the initial state, in inequality; the AR group feet sedentary on ergo meter wheel with 65-55% of maximum heart rate while PR group rested on the wheel. Indices for determining central tendency and dispersion, descriptive statistics and averages for comparing two groups; the t-test for comparison of three tests in a one-way ANOVA was used. The results showed that the group returned to the initial state of the active group compared to the initial conditions were better off in relative peak anaerobic power, which was statistically significant. The data results in both groups showed significant blood lactate.

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1. Introduction

Fatigue when performing sports activities, one of the major barriers to successful implementation and sports activities. Hence, numerous studies in order to understand the different factors act; schemes to postpone fatigue have done. However, according to the type of exercise, one or several of these factors have a significant role in fatigue.

For example, in endurance activities, evictions and glycogen storage are the most helpless and speed up the rate of oxygen supply is not consistent with glycogen analyze. As a result there is oxygen fraction, the accumulation of lactic acid causes fatigue and frustrate therefore, lactic acid response to heavy and fast sports activities is evident.

Lactate disposal, delay fatigue and improve performance of the factors that affect their return to the initial state can be effective. Findings of early return to active and passive mode during periods of intense exercise repeated with different intervals on anaerobic power, heart rate and blood lactate has been investigated (Draper, 2006).

In research, energy efficiency over the two periods with a maximal speed within 30 seconds of riding time, 4 minutes back to the initial state of active (AR) and passive (PR) was studied, the higher power outputs achieved during the second AR come, but no difference between blood lactate (Bugbanes, 1996). In another study, a significant increase in mean maximal aerobic power

during a time of intense activity within 3 min with a return to the initial state was reported, while no significant difference in lactate (Mavrommatakis, 2006). Evaluation of lactate during exercise and Judo Brazilian national team during 5 minutes (4 place manually Wingate test) with a return within 15 minutes when the initial state, but significant differences were observed in the decrease in lactate (AR) was observed (Francine, 2003).

Gayny and Zafari (2005) results showed that both active and passive recycling program at minutes 5 and 12, the changes in blood lactate caused by an exhaustive exercise, there is no significant difference. Elimination of lactate accumulation in the return to the initial state is close to lactate threshold occurred. And researchers seek to answer is whether the return to the initial state of active and passive on anaerobic power and blood lactate elite Handball players has a different impact?

2. Methodology:

Quasi-experimental and experimental research is done. The population of the city's elite research Handball players PA has formed. The sample was randomly assigned to two groups of 20 patients returned to the initial state of active (AR) and passive (PR) were divided. Three bouts of 2 minutes each Wingate test with 15 minutes played back to the initial state, with the difference that in the AR group during 15 minutes with 65-55% of maximal heart rate

and PR group as they sat down on the wheel Ergo meter the rest. Relative peak anaerobic power, resting blood lactate samples in each instance was measured 3 minutes after each test. Questionnaire developed to measure the physical activity and bicycle ergo meter be a model (Test Ergo meter Wingate) 894E measurement tools were used. Indices for determining central tendency and dispersion, descriptive statistics and averages for comparing two groups, independent t test comparing the average of three tests in a group of one-way ANOVA was used.

3. Results:

Table 1) Comparison of the initial state of activation and inactivation on anaerobic power elite maximal relative Handball players.

Test period	The relative peak anaerobic power (w/kg-1)		
	The first test	The second test	The third test
Back on the initial state	1/2±8/11	35/2±6/11	12/2±3/11
Return to the initial state of the active	15/2±9/10	*6/2±6/13	*25/2±3/15

*p < 0/05

Maximal mean anaerobic power relative to the initial state in the second test ($6/2 \pm 6/13$) and third ($25/2 \pm 3/15$) was significantly higher than the return on the initial state in the second test ($35/2 \pm 6/11$) and the third test ($12/2 \pm 3/11$) has gone up ($p < 0.01$).

Table 2) Comparison of the initial state of active and inactive on the blood lactate elite Handball players.

Test period	Blood lactate (mmol / l -1)		
	The first test	The second test	The third test
Back on the initial state	6/05±2/57	*24/2±02/5	*55/1±80/4
Return to the initial state of the active	66/2±32/6	*4/05±1/27	*3/7±1/27

*p < 0/05

Blood lactate in both groups returned to the initial state in the second test ($27/1 \pm 05/4$) and the third test ($45/1 \pm 7/3$) and the group returned to the initial state on the second test ($24/2 \pm 02/5$) and the third test ($55/1 \pm 80/4$) came down and was statistically significant ($p < 0.01$). However, the reduction in the initial state is back on the second and third test was much lower.

4. Discussion :

In the present study, 15 minutes back to the initial state is maximal and average relative

improvement of the anaerobic Wingate test was the second and third. In the case of sequential anaerobic RA group than in the RP interval more than 15 minutes, significant differences have been reported in previous studies (Francine,2003). While during the interval less than 6 minutes, a significant difference has been reported (Draper,2006).

The second hypothesis, results showed that blood lactate in both groups returned to the initial state off the bottom and was statistically significant. ($p < 0.0$) However, the reduction in the group return to the initial state is to disable the second test was much lower.

Ramazani is aligned with the research findings to mean that blood lactate is less active in the group return to the initial state. In a study on 20 elite swimmers were in the age group 12-14 and 15-20, Changes in blood lactate levels and heart rate returned to normal on two types of swimming (swimming with two intensity) and return on the initial state (sitting) were evaluated.

Results showed that blood lactate levels during the swimmers return to the initial state are active with both the severity of the initial state (sitting) is lower. Reduction in blood lactate between the two age groups of 65-55 percent with only a return to baseline was significant. The relationship between heart rate and blood lactate in the two age groups 20-15 years and 65-55 with a highly significant (Ramezani,2001).

In the present study, reduction in blood lactate levels in the RA group compared to the RP was observed that the main reason it can lactate oxidation by muscles active, inactive, liver and heart lactate turnover is over. In a study of blood lactate values of 2 groups of 5 and 15 minutes of rest and activation was investigated. Wild group of 11 subjects participated in both. Bruce Cunningham for test evaluation and test VO_{2MAX} extreme methods were used to maximal. Group plans to return to the initial state is running on a treadmill with a speed km / h 4, and the rest of the group sitting on the chair and the rest were inactive. Lactic acid and heart rate, subjects were measured on four occasions. Results showed that blood lactate measurements in both groups after 5 and 12 minutes of returning to the initial state there is no significant difference (Gayyny and Zafari, 2005).

5. Conclusion:

Quality can be converted back to the original state during rest and accelerate the disposal of waste generated at the time of intense activity, are crucial. Athlete with the principles of the initial state can return to their abilities to participate in this training to maximize competition. Until lactate levels within the muscle doesn't return to its normal, the

person is fully prepared to participate in the next race. In this study, the researcher has tried to return to the initial state of a place in the competition to be held in tandem with short recovery intervals to measure. Because of the elite wrestlers used to achieve this goal. The results indicate a significant impact on return to the initial state of the maximal anaerobic power and the blood lactate showed significant results in both groups with this difference that results in an active return to the initial state was much better off returning to the initial state. Although the results of research hypotheses were significant, but suggests that the researcher to generalize to other disciplines or functional use it to further research in non-laboratory conditions is required.

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