

ABSTRACT

**Correlation between VO₂ Max and the Velocity of Lactic Acid
Recovery after Sub maximum Physical Exercises**

Dita Yuliastrid

The objective of this research is to find out the correlation between VO₂ max and the velocity of lactate acid recovery after sub maximum physical exercise. The samples were 20 people, divided into two groups, each groups consisted of 10 persons. The first group (untrained) had VO₂ max 35-40 ml/kg/min and the second (trained) had 55-60 ml/kg/min. Both groups did sub maximum physical exercise (85% HRM) using ergocycle. The blood lactic acid level was taken as the data from the fingertips three times; before the exercise, after 5 minutes and 15 minutes recovery. The result showed that : the average of group 1's initial lactic acid was 1.86 ± 0.1955 mMol/l and group 2 was 1.55 ± 0.2014 mMol/l; the average lactic acid after 5 minutes recovery of group 1 was 6.61 ± 0.4408 mMol/l and group 2 was 5.62 ± 0.3994 mMol/l; after 15 minutes recovery, group 1 was 5.96 ± 0.568 mMol/l and group 2 was 2.85 ± 0.7821 mMol/l. The average decrease of group 1's lactic acid was 0.650 ± 0.369 mMol/l and group 2 was 2.770 ± 0.693 mMol/l. The pace of group 1's lactate decrease was $6.5 \times 10^{-2} \pm 3.69 \times 10^{-2}$ mMol/l minutes and group 2 was $0.277 \pm 6.93 \times 10^{-2}$ mMol/lminutes. The result of ANAVA univariate test showed that the difference of the lactic acid decrease and the recovery pace between group 1 and 2 was very significant ($p < 0.05$). To be concluded, there was correlation between VO₂ max and the velocity of lactic acid recovery after sub maximum physical exercises ;and the recovery of blood lactic acid level after sub maximum physical exercise was faster in a group with 55-60 ml/kg/min of VO₂ max than in a group with 35-40 ml/kg/min of VO₂ max.

Key words : VO₂ max, lactic acid, sub maximum physical exercises.