

ABSTRACT

The aim of this research was to investigate the influence of relative hyperbaric hyperoxic environment on oxygen pulse.

Method. This was a laboratory experimental research and the design was a randomized pretest posttest controlled group design. Samples of this research were 18 students from Indonesian Naval Health School. Sample criterias were healthy man, 18-22 years old, normal in physical and laboratory diagnostic. The subjects performed physical work with submaximal load on a bicycle ergometer while breathing air at ambient pressures of 1 ATA (control) and 2 ATA, and a mixture of 90%N₂ 10%O₂ at 2 ATA.

Statistical analysis for hypothesis were descriptive, normality distribution, homogenation, anakova, anova, pairwise comparisons and discriminant.

Result. Oxygen pulse also increased linearly with the ergometric load in all 3 condition. However, as compared to the values at 1 ATA breathing air, oxygen pulse for given ergometric load was higher at 2 ATA 90%N₂10%O₂ (0.0082±0.0011 l/heart beat) and highest at 2 ATA breathing air (0.0102±0.0012 l/heart beat).

Conclusion. Oxygen pulse during physical work with submaximal load in relative hyperbaric hyperoxic environment more higher than that in hyperbaric normoxic environment.

Key words : relative hyperbaric hyperoxic, oxygen pulse, submaximal work