Exercise induced arterial hypoxemia (EIAH) has been reported in various endurance male and female sport specialists, including runners, cyclists, triathletes, swimmers and rowers (Prefaut et al., 2000). When EIAH is present, it usually peaks at or near maximal exercise intensity and during short-term or incremental exercise to exhaustion (Lama et al., 1996). During heavy exercise, women demonstrate greater expiratory flow limitation, an increased work of breathing and perhaps greater exercise induced arterial hypoxemia (EIAH) compared to men. The purpose of the present study was to determine possible sex differences in the degree of arterial desaturation during a rowing ergometer 2000m all-out effort. Twenty two male (age: 19.72±1.06 years, training age: 5.45±0.91 years, weight: 89.09±9.05 kg, height: 184.10±1.15 cm) and fourteen female (age: 17.72±0.54 years, training age: 4.27±0.28 years, weight: 66.40±1.84 kg, height: 169.59±1.52 cm) highly-trained rowers, were participated in a 2000m all-out effort on a wind resistance braked rowing ergometer (Concept IIc, Nottingham, UK). Arterial oxygen saturation was assessed non-invasively by ear oximetry (Nanox2-Medlab, Karsruhe, Germany). The minimum level of % SaO2 was determined using 15-s averages. Rowing drag factor was set in 135 units for male and 125 units for female athletes. Data are expressed as means (±SE). Percent arterial O2 saturation (SaO2), values were significantly higher in male compared to female rowers at 500m (95.91±0.25 vs 94.00±0.50, p<.01), 1000m (93.36±0.38 vs 91.64±0.59, p<.05), 1500m (91.91±0.53 vs 89.55±0.70, p<.05) and on end-exercise (90.58±0.71 vs 87.55±0.71, p<.05). In conclusion the phenomenon of EIAH is more pronounced in female compared to male rowers during maximal effort.

References

Keywords: Gender Studies, Applied Physiology, Rowing