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Plasma redox response of Sicilian Opuntia Ficus Indica juice in young physically active women

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It is known amateur female athletes show an altered redox status [1] and the consumption of Opuntia Ficus Indica (OFI) decreases oxidative stress (OS) in healthy humans [2]. Therefore, the aim of this study was to investigate whether the supplementation with Sicilian OFI juice affected plasma redox balance following a maximal effort test in young physically active women . This study was randomized, double blind, placebo controlled and crossover design. Eight women (23.25±2.95 years old, weight of 54.13±9.05 kg, height of 157.75±0.66 cm and BMI of 21.69±0.66 kg/m^2) were randomly divided into 2 groups and each group was supplied with either 50 ml OFI, diluted to 170 ml with water, or 170 ml Placebo containing the same concentration of fruit juice ingredients except for Vitamin C and indicaxanthin. They consumed OFI or Placebo every day for 3 days before of effort test on cycle ergometer and continued to take it for 2 consecutive days after testing. Blood samples were taken before and after the effort test without supplementation (baseline), pre- and post-test, 24 h and 48 h post-test with OFI or Placebo supplementation. H2O2 levels and total antioxidant capacity (PAT) were measured with photometer and resonance Raman spectroscopy [1,2]. The differences within and between groups were calculated with ANOVA analysis and considered significant with $P<0.05$.

OFI group showed a significant lower quantity of H_2O_2 than Placebo group after the effort test. PAT levels of OFI group were significantly higher than pre/post those of baseline and 48 h post-test of Placebo group.

In conclusion, OFI supplementation might to be used to restore redox balance after intense exercises in moderately trained women.

References

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Keywords

Antioxidant supplementation, oxidative stress, redox balance, indicaxanthin