The oxidative stress status of gingival crevicular fluid, saliva and serum in non-competitive bodybuilders

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Intensive training may cause oxidative stress associated with the onset and progression of chronic inflammatory diseases. Indeed, bodybuilding and protein powder-supplements have become increasingly popular. The aim of this study therefore was to evaluate and compare the oxidative stress in non-competitive bodybuilders who used protein powder supplements with non-exercising males in saliva, gingival crevicular fluid (GCF) and serum. Non-competitive male bodybuilders with gingivitis (BB-G)(n=25) and non-exercising males with (G) (n=25) and without (H) (n=25) gingivitis were included in the study. Serum, saliva and GCF were collected from the participants after 24 hours of acute exercise and examined for total antioxidative status (TAS) and total oxidative status (TOS) using a novel colorimetric assay. No differences were found for age, smoking, alcohol consumption and body mass index (BMI) in all groups. Serum OSI levels were higher in group BB-G compared with both groups G and H ($p<0.01$). No differences were found for the saliva OSI between groups ($p>0.05$). GCF OSI levels were higher in both groups BB-G ($p<0.05$) and G ($p<0.01$) compared with group H. No correlation was found between saliva and serum TOS, TAS, and OSI levels in group BB-G. Bodybuilding training may disturb the balance between the oxidants and antioxidants in serum, and supplements having antioxidant effects may be inadequate to prevent this. No harmful effect in GCF and saliva for oxidative stress was detected in bodybuilders. Saliva may not be an alternative to serum for oxidative stress screening in bodybuilders using protein powder supplements.

Biography

Kubra Aral has completed her PhD in Periodontology in 2014. She has been a research fellow in Department of Oral Biology, University of Florida, USA in 2012. She has been working as a visiting researcher in Department of Oral Biology, University of Birmingham, UK.

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