ANNALS OF RESEARCH IN SPORT AND PHYSICAL ACTIVITY

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THE EFFECT OF PROFESSIONAL SPORT TRAINING ON CIRCULATING MARKERS OF ASEPTIC VASCULAR INFLAMMATION

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KEYWORDS: nitric oxide, nitrotyrosine, inflammation, lipid profile, wrestlers

INTRODUCTION

Vascular inflammation is an early marker of endothelial dysfunction prior to the development of structural changes and clinical symptoms, contributes to the progression of atherosclerosis, and increases the risk of coronary events. Studies over the past year have demonstrated the significance of inflammation in endothelial apoptosis which can be caused by high level of various pro-apoptotic factors such as tumour necrosis factor (TNF α), nitric oxide (NO) and 3-nitrotyrosine (3-Nitro), free and oxidised low-density lipoproteins (oxLDL) generated during long-term intense exercise. Endothelial dysfunction resulting from elevated inflammatory and pro-apoptotic mediators has been implicated in cardiovascular diseases (CVD)⁽¹⁻³⁾. We examined the effects of sport training on pro-apoptotic factors and their interaction with vascular inflammation.

MATERIALS AND METHODS

Blood samples were collected from elite Greco-Roman wrestlers ($n=16$) during preparatory period for the new season (pre-season, January) as well as from non-athletes ($n=12$).

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RESULTS

NO concentration did not differ between groups while TNF α , 3-Nitro, oxLDL and hsCRP were significantly higher in wrestlers compared to non-athletes. Wrestlers showed the high levels of TNF α , 3-Nitro, hsCRP, total cholesterol (TC), LDL lipoproteins and atherogenic coefficient (AC). 3-Nitro concentration correlated with hsCRP ($r=0.609$, $p<0.001$), LDL ($r=0.381$, $P<0.05$) and AC ($r=0.408$, $p<0.001$).

CONCLUSION

The findings suggest that sport training may be associated with higher levels of pro-apoptotic mediators are related to other conventional CVD risk factors.

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