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Abstract

Objectives. The present study aimed to identify optimal inflammatory biomarkers involved in cardiorenal risk in response to major lifestyle factors.

Methods. One hundred and twenty-nine adults aged 35–77 years participated voluntarily from 2017 to 2019 (Córdoba, Argentina) in a cross-sectional study to collect sociodemographic, clinical, and lifestyle data. Blood biomarkers (different cytokines, monocyte chemoattractant protein-1 [MCP-1], and high-sensitivity C-reactive protein [hs-CRP]) were measured using standard methods and then evaluated by principal component analysis and structural equation modeling (SEM) according to Mediterranean diet adherence, physical activity level, and waist circumference, while cardiorenal risk involved blood diastolic pressure, HDL-cholesterol, triacylglycerols, creatinine, and glycosylated hemoglobin.

Results. A principal component included TNF-α (tumor necrosis factor-alpha), IL-8 (interleukin-8), IL-6 (interleukin-6), hs-CRP, and MCP-1, with absolute rotated factor loadings >0.10. SEM showed that IL-6 (β=0.38, 95 % IC=0.08–0.68), hs-CRP (β=0.33, 95 % IC=0.17–0.48), and TNF-α (β=0.22, 95 % IC=0.11–0.32) were the mediators that better explained an inflammatory profile positively

related to waist circumference (β=0.77, 95 % IC=0.61–0.94). Moreover, this profile was associated with an increased cardiorenal risk (β=0.78, 95 % IC=0.61–0.94), which was well-defined by the variable used.

Conclusions. Immune mediators are key elements in profiling the cardiorenal risk associated with lifestyle factors, for which the combination of hs-CRP, IL-6, and TNF-α has emerged as a robust indicator. This work reaffirms the need for biomarker optimization for early diagnosis and risk assessment.

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