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308 - VALIDATION OF INFLAMMATORY DIETARY INDEXES WITH BIOMARKERS IN WOMEN IN SPAIN

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Resumen

Background/Objectives: Several studies have explored the relationship between indicators of chronic inflammation and diet. The Dietary Inflammatory Index (DII) and energy-adjusted DII (E-DII) quantify the inflammatory potential of the diet on a continuous scale from maximally anti-inflammatory to maximally pro-inflammatory. The aim of this study was to validate both indexes in women in Spain using 16 inflammatory biomarkers.

Methods: A cross-sectional study (DDM-Madrid) was conducted with epidemiological data and Food Frequency Questionnaire (FFQ) from 1,132 premenopausal women aged 39-50 years working for Madrid City Council. Serum concentrations of inflammatory biomarkers were quantified using flow cytometry and nuclear magnetic resonance spectroscopy, including IL-1β, IL-2, IL-4, IL-6, IL-8, IL-10, IL-12p70, IL-17A, IP10, TNF-α, MCP1, IFN-γ, TGF-β1, hsCRP, GlycA and GlycB. The association of each biomarker with DII and E-DII was evaluated using linear regression models adjusted for age, body mass index (BMI), physical activity (METs hours/week), social class, tobacco use, and chronic diseases, to estimate the relative change in concentrations by quartiles (Q1, Q2, Q3, Q4) of DII or ED-II scores. In addition, the non-linear relationship was evaluated using cubic splines, as well as interactions for the most relevant associations, with BMI, tobacco use and presence of at least one chronic disease.

Results: The mean (standard deviation) of the DII and E-DII were -1.50 (2.95) and -1.02 (2.36), respectively. Women consumed an average of 2,176 (615) kcal/day, mean BMI

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was 24.08 (4.00) kg/m^2, 7.69% had obesity, 25.53% smoked, and 19.71% had a chronic disease. Women in Q4 vs. Q1 of DII showed significantly higher concentrations of hsCRP (% change (95%CI) = 16.33% (2.02%; 30.64%)), GlycA (2.18% (0.65%; 3.71%)) and GlycB (1.95% (0.39%; 3.51%)), and a decrease in IL-6 (-24.12% (-45.12%; -3.12%)). For E-DII, Q4 maintained a significant increase in hsCRP (22.12% (7.71%; 36.52%)), GlycA (2.47% (0.93%; 4.01%)) and GlycB (2.18% (0.61%; 3.75%)). In the non-linear analysis, significant curvature was found for the association of E-DII with IL-4 (p-value = 0.04), TNF-α (0.07) and hsCRP (0.03). The stratified analyses showed stronger associations with DII in the BMI ≥ 25 groups for GlycA and GlycB.

Conclusions/Recommendations: Both DII and E-DII showed consistent and biologically plausible associations with established inflammatory biomarkers, particularly hsCRP, GlycA and GlycB, supporting their validity as dietary inflammatory indexes in this population of premenopausal women in Spain.

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