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774 - DEVELOPMENT AND VALIDATION OF AN OPEN-ACCESS PAEDIATRIC DIETARY INFLAMMATORY POTENTIAL

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Resumen

Background/Objectives: This study aimed to develop and validate a Paediatric Dietary Inflammatory Potential (PDIP), using open-access dietary data to establish a reference population (RP). Different PDIPs were computed and evaluated with biomarkers of inflammation.

Methods: PDIP was estimated for 3,578 individuals at the 7-year follow-up (7y) and 2,849 at the 10-year follow-up (10y) of the Generation XXI (GXXI) birth cohort. Various methods were used, including unadjusted and adjusted with Generalized Additive Models for Location Scale and Shape (GAMLSS) and density model. Food parameter (FP) intakes from the Global Dietary Database (13 countries; 108,707 participants aged 3-17) were used to model consumption distribution. Sample weights from the United Nations were used to adjust for sex, age, and country-specific factors to align the sample with global population proportions. FPs, centred percentiles (CPs) were then calculated and multiplied by the corresponding FP-inflammatory effect scores (IES) retrieved from the literature to obtain FP-specific PDIP values, which were summed to generate the overall individual-PDIP. Four PDIPs were computed: completePDIP (including all 38-FPs), woFlavonoidsPDIP (excluding flavonoids, 32-FPs), woBioactivesPDIP (excluding FPs with important bioactive properties, 25-FPs), and ShortPDIP (excluding FPs that may be overlapping, 25-FP). Higher PDIP values indicate more pro-inflammatory diets. Pearson correlations were computed between the different versions and high sensitivity C-reactive protein (hs-CRP) (range 0.2-10 mg/L), leptin and White Blood Cells (WBC) at 7y and hs-CRP and WBC at 10y.

Results: The best results were observed for the ShortPDIPunadj (energy-unadjusted without GAMLSS). Statistically significant positive correlations were found between ShortPDIPunadj and hs-CRP ($r = 0.07$) and leptin ($r = 0.15$) at 7y; and with hs-CRP ($r = 0.08$) and WBC ($r = 0.09$) at 10y.

Conclusions/Recommendations: This study successfully developed and released a paediatric-RP based on open-access data. The ShortPDIPunadj was effectively correlated with inflammation biomarkers, making it a promising tool for paediatric research due to its simplicity and ease of implementation.

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