


Abstract

Development and Validation of a Food Frequency Questionnaire to Assess Polyphenol Intake and Its Association with Inflammation in the Portuguese Population: Study Plan [†]

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Abstract: Background: Conditions like inflammatory bowel disease (IBD) are lifelong inflammatory diseases that involve chronic inflammation of the gastrointestinal tract. Polyphenols are phytochemicals that are found in plant-based diets and possess beneficial health properties. Nutritional research has reported that a higher intake of polyphenols is associated with several health benefits. However, despite the health importance, measuring polyphenol intake in free-living subjects is challenging. There is a need to quantify polyphenol intake. Currently, there is a lack of validated food frequency questionnaires (FFQs) available for the assessment of polyphenol intake in the Portuguese population. Objectives: The purpose of this research is to (1) develop and validate a new food frequency questionnaire to assess the dietary polyphenol intake in the Portuguese population and (2) to use the validated FFQ to assess the relationship between the polyphenol intake and the inflammatory status in IBD patients. Hypothesis: Higher polyphenol intake is negatively associated with inflammatory biomarkers, such as calprotectin, C-reactive protein and inflammatory cytokines in IBD. Methods: To develop a semiquantitative FFQ consisting of max. 150 items by adapting the existing Portuguese FFQ and adding polyphenol-rich foods. Polyphenol data will be obtained from Phenol-Explorer, the USDA database, published literature and laboratory total phenol analysis. Dietary intake will be obtained from 100 adults. Population group—Portuguese, male and female. Validation will be calculated using the Wilcoxon signed-rank test, Spearman’s correlation and Bland–Altman statistics between 24-HRs and FFQs, corrected for attenuation from the within-person variation in the recalls. Discussion: A study will be conducted to assess the polyphenol intake using the validated FFQ in free-living IBD patients, and to measure the symptom severity and inflammatory biomarkers (C-reactive protein, inflammatory cytokines and calprotectin) to assess the association between the polyphenol consumption and the inflammatory status of IBD patients. Based on these data, patients will be stratified by low, medium or high polyphenol consumers and correlated with inflammation and symptom severity.

Keywords: FFQ; polyphenols; validation; 24-HR; inflammatory bowel disease; IBD; inflammation



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