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Inflammatory Bowel Disease exercise and diet (IBDeat) habits study: exploring lifestyle habits and cardiometabolic disease risk factors

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Patients with inflammatory bowel disease (IBD) have higher risk of developing cardiometabolic diseases due to chronic gut and systemic inflammation which promotes atherogenesis. Adopting healthy lifestyle habits can prevent development of cardiometabolic diseases, but can be challenging for people with IBD. The IBD exercise and diet (IBDeat) habits study describes the lifestyle habits and cardiometabolic disease risk factors of adults with IBD in Aotearoa, New Zealand (NZ).

This is a cross-sectional study including adult NZ IBD patients recruited online via Crohn's and Colitis NZ and Dunedin hospital from 2021 to 2022. An online questionnaire collected demographics, smoking status, comorbidities, medications, disease severity scores, quality of life, physical activity, and dietary intake. The Dunedin cohort had physical measurements taken including anthropometrics, handgrip strength, blood pressure, body composition (bioelectrical impedance), blood nutritional markers, and faecal calprotectin. Data were compared to established reference values and linear regression analysis investigated associations between lifestyle habits and cardiometabolic risk factors. The study received University of Otago ethical approval (reference: H21/135). A total of 213 adults with IBD (54% Crohn's disease; 46% ulcerative colitis) completed the online questionnaire and a subset of 102 from Dunedin provided physical measurements. Participants characteristics were: median age 37 (IQR 25, 51) years, 71% female, 82% NZ European, 4% smokers, and 1.4% had active IBD. Thirty-five percent of participants had at least one comorbidity and 34% of participants had poor quality of life. Known dietary risk factors associated with cardiometabolic diseases were common: low intakes of vegetables (77%), fruit (51%), fibre (35%) and high intakes of total fat (84%) and saturated fat (98%). Physical activity recommendations were met by 61% of participants and 63% reported barriers to being more active from fatigue (63%) and joint pain (54%). Other cardiometabolic risk factors were common in the Dunedin cohort: high LDL (79%) and total cholesterol (76%), central adiposity (64%), high body fat percentage (44%), high blood pressure (26%), and low handgrip strength (25%). Regression analysis showed that vegetable (per serve) and carbohydrate (per 5% of total daily energy intake (TE)) were associated with 0.22 mmol/L (95%CI 0.43, 0.013) and 0.20 mmol/L (95%CI 0.34, 0.057) lower LDL cholesterol. Discretionary food items were associated with higher LDL cholesterol, 0.11 mmol/L per daily serve (95%CI 0.028, 0.19). A 5% difference in TE intake from carbohydrate was associated with 1.11% (95%CI 2.22%, 0.0038%) lower body fat percentage while protein was associated with 3.1% (95%CI 0.81%, 5.39%) higher body fat percentage. Physical activity had weak associations with cardiometabolic disease risk factors. Adults with IBD have multiple modifiable risk factors for cardiometabolic diseases. Vegetable and carbohydrate intake were associated with lower LDL cholesterol concentration while discretionary food items showed otherwise. Protein intake was associated with higher body fat percentage.

Keywords: inflammatory bowel disease; nutrition; physical activity; LDL-cholesterol

Ethics Declaration

Yes

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Reference

1. Feng W, Chen G, Cai D *et al.* (2017) *J Am Heart Assoc* **6**(8), 1–9.