Proceedings of the Nutrition Society (2024), **83 (OCE4)**, E414 doi:10.1017/S0029665124006529

Nutrition Society Congress 2024, 2–5 July 2024

Is diet quality associated with comorbidity and severity of psoriasis? A cross-sectional analysis of data from UK Biobank

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Psoriasis has been linked to various diet-related comorbidities such as metabolic syndrome, type 2 diabetes, and cardiovascular disease[(1)]. Evidence for the role of diet in the management of psoriasis and its comorbidities is lacking, and there is no dietary guidance for people with psoriasis. This study aimed to characterise the dietary patterns and quality by adherence to the UK Eatwell guide and a Mediterranean-style diet in UK individuals living with psoriasis and assessed associations between diet quality and risk of psoriasis comorbidities, psoriasis severity and cardiometabolic risk markers.

Using the UK Biobank cohort, we identified 2,615 patients with psoriasis by self-report or health records at baseline, with a comparison group of 122,572 non-psoriasis participants who have valid dietary data. The dietary intake was assessed through online 24h-recalls (Oxford WebQ) conducted every 3-4 months over one year. The average nutrient and food groups intake were calculated from at least 2 recalls to determine adherence to the UK Eatwell Guide (Eatwell Score, range: 0-9[(2)]) and the Mediterranean-style diet (alternative Mediterranean diet (aMED) score[(3)], range: 0-9). Associations between diet quality and the risk of 13 selected comorbidities, psoriasis severity (assumed from treatment type), and cardiometabolic risk markers were evaluated using multivariate regression models, adjusted for confounders including age, sex, Townsend deprivation factor, physical activity levels, smoking, alcohol, supplement use and the reporting source of psoriasis.

Both psoriasis and non-psoriasis groups showed similar average scores for Eatwell (3.9 ± 1.7 for both groups) and aMED (3.6 ± 1.8 and 3.3 ± 1.7, respectively). Higher Eatwell scores were associated with a 15% reduced risk of myocardial infarction (OR = 0.85, 95% CI: 0.74–0.98, $P = 0.025$) and 23% increased risk of osteoporosis (OR = 1.23, 95% CI: 1.05-1.45, $P = 0.010$) in participants with psoriasis. Additionally, higher Eatwell scores were associated with lower BMI (StdBeta, adjusted P: −0.049, 0.013) and improved plasma lipid profiles (cholesterol: −0.058, 0.004; LDL: −0.068, 0.001; triglycerides: −0.076, <0.001). A higher aMED score is positively associated with better plasma lipid profiles (cholesterol −0.051, 0.012; LDL −0.051, 0.012) in individuals with psoriasis fully adjusted. No significant association was found between diet quality and psoriasis severity. However, participants with the highest severity (on systemic treatment) had a 34% lower chance of meeting guidelines for fruit and vegetable intakes (5 servings/day) compared with those on no treatment or topical treatment only (OR = 0.66, 95% CI: 0.46–0.95, $P = 0.024$).

Our findings suggest that higher dietary quality is associated with a reduced risk of certain cardiometabolic diseases in people with psoriasis, emphasising the importance of dietary management in this population. Longitudinal and intervention studies are needed to further explore the role of diet in psoriasis and its associated health outcomes.

Acknowledgments

This research has been conducted using the UK Biobank Resource under Application Number 88354. This research was funded by the British Skin Foundation (Grant number: 021_BSMD_22).

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