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Feasibility, acceptability and safety of a 12-week probiotic intervention for people with Multiple Sclerosis: A mixed-methods single-arm trial.

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Feasibility, acceptability and safety of a 12-week probiotic intervention for people with Multiple Sclerosis: A mixed-methods single-arm trial.

Dr Anouska Carter, Nik Kudiersky, Dr Lynne Barker, Dr Caroline Dalton, Dr Samantha Gill, Prof. Basil Sharrack, Prof. Siva Nair and Sue Kesterton

Context

- Increasing evidence suggests that the gut-brain axis plays a key role in the pathogenesis of MS (1).
- MS is associated with an altered gut microbiome and increased intestinal permeability, potentially allowing pathogens to stimulate an immune response that affects the central nervous system (2,3).
- Microbiome-targeted therapies such as probiotics, have the potential to offer an alternative therapeutic approach to drug-based symptom management (4).

Aim

To assess the feasibility, acceptability, safety and potential efficacy of a probiotic (SymproveTM, UK) intervention for pwMS.

Design and Methods

- Mixed-methods, single-arm feasibility trial, recruited through online MS groups and using remote data collection.
- Data collected pre and post a 12-week probiotic intervention, with focus groups conducted after 12-weeks.
- Primary outcomes were recruitment, retention, adherence, acceptability and safety.
- Secondary outcomes included quality-of-life and MS symptoms.

Results

- Out of 32 eligible participants, 29 were recruited (90.6%), adherence to the intervention was excellent (98.8%), with 26 (89.7) participants retained at 12-week follow-up.
- Mild gastrointestinal symptoms were expected and transient.
- Taking the probiotic was reported as acceptable, scoring highly in all 7 acceptability domains, this was further reflected in the qualitative data

'It doesn't take much effort, whereas a lot of things do, and I knew it was good'.

'It is doable but it's not as convenient if you're travelling...'

- Self-report questionnaire data for overall quality-of-life and cognitive function scores were significantly improved (p=0.007) at 12-weeks.

'Cognitively I would say I suffered less from brain fog'

'I think it improved my bowel, and I was less bloated'

Conclusion

- 12-week probiotic intervention was feasible, safe and acceptable to pwMS.
- Improvements in health-related outcomes suggest probiotics could play a role in symptom management.
- Further research is recommended to verify these findings.

References

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Symprove

Sheffield Teaching Hospitals NHS Foundation Trust