Cochrane Database of Systematic Reviews - - Cochrane Review

Prebiotics for people with cystic fibrosis

Code: CD015236 **Year:** 2023 **Date:** 2022 - updated 13 JAN 2023 **Author:** Williams N

Study design (if review, criteria of inclusion for studies)

Trials using both single and combined fibreâ€•prebiotic interventions of inulin, FOS and GOS. Authors will exclude candidate fibre prebiotics of resistant starch, polydextrose, xyloâ€•oligosaccharide, imaltoâ€•oligosaccharide and isomaltoâ€•oligosaccharide due to the lack of evidence to accepted them as qualified prebiotics; candidate nonâ€•fibre prebiotics polyphenolics, and polyunsaturated fatty acids. We will exclude in vitro trials or trials examining the effect of probiotics alone or synbiotics (without adequate description on dose of prebiotic and type of prebiotic used).

Participants

Children and adults with CF, who fulfil consensus diagnostic criteria for CF (Farrell 2017). No restrictions for participants in terms of age, gender, genotype, pancreatic exocrine sufficiency status, disease severity, comorbidities, antibiotic use or CFTR modulator therapy.

Interventions

ined as "a substrate that is selectively utilised by host microorganisms conferring a health benefit". Authors will compare any oral fibreâ€•prebiotic (inulin, FOS and GOS, dose or formulation, without a probiotic) to any other prebiotic formulation, probiotic or synbiotic, or placebo or no control treatment. Soluble fibreâ€•prebiotic inulin, fructoâ€•oligosaccharides (FOS), and galactoâ€•oligosaccharides (GOS) and human milk oligosaccharides (HMOs).

Outcome measures

Primary outcomes: 1) Growth and nutrition (mean change from baseline and postâ€•treatment absolute mean): height, weight, BMI. 2) GI symptoms measured using the multimodal questionnaire for the assessment of abdominal symptoms in people with cystic fibrosis (CFAbd Score). 3) Adverse events. Secondary outcomes. Secondary outcomes: pulmonary exacerbations, lung function (mean change from baseline and postâ€•treatment absolute mean), inflammatory biomarkers, hospitalisations (all causes), Healthâ€•related quality of life (HRQoL) measured using a validated questionnaire (e.g. Cystic Fibrosis Questionnaire â€“ Revised (CFQâ€•R); Quittner 2009).

Main results

Authors did not identify any relevant trials for inclusion in this review.

Authors' conclusions

This review did not find any evidence for the use of prebiotics in people with CF. Until such evidence is available, it is reasonable for clinicians to follow any local guidelines and to discuss the use of dietary prebiotics with their patients. Large and robust RCTs assessing the dietary prebiotics of inulin or galactoâ€•oligosaccharides or fructoâ€•oligosaccharides, or any combination of these, are needed. Such studies should be of at least 12 months in duration and assess outcomes such as growth and nutrition, gastrointestinal symptoms, pulmonary exacerbations, lung function, inflammatory biomarkers, hospitalisations, intestinal microbial profiling, and faecal shortâ€•chain fatty acids. Trials should include both children and adults and aim to be adequately powered to allow for subgroup analysis by age.

https://doi.org/10.1002/14651858.CD015236.pub2

See also

Williams NC, Jayaratnasingam J, Prayle AP, Nevitt SJ, Smyth AR. Prebiotics for people with cystic fibrosis. Cochrane Database of Systematic Reviews 2023, Issue 9. Art. No.: CD015236. DOI: 10.1002/14651858.CD015236.pub2. Accessed 03 October 2023.DOI:10.1002/14651858.CD015236

Keywords

Inulin; Prebiotics; Immunoregulatory; pharmacological_intervention;