primary studies - published RCT

Gut Bifidobacteria enrichment following oral Lactobacillus-supplementation is associated with clinical improvements in children with cystic fibrosis.

Code: PM35902830 **Year:** 2022 **Date:** **Author:** Ray KJ

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

Multi-center, double-blind, randomized placebo-controlled trial

Participants

CF patients

Interventions

Lactobacillus supplementation. Daily Lactobacillus rhamnosus strain GG (LGG) probiotic supplementation over a 12-month period.

Outcome measures

Fecal 16S rRNA biomarker sequencing was used to profile fecal bacterial microbiota and analyses were performed in QiiME.

Main results

Bifidobacteria-dominated fecal microbiota were more likely to arise in LGG-treated children with CF (Pâ€‰=â€‰0.04). Children with Bifidobacteria-dominated gut microbiota had a reduced rate of pulmonary exacerbations (IRRâ€‰=â€‰0.55; 95% CI 0.25 to 0.82; Pâ€‰=â€‰0.01), improved pulmonary function (+â€‰20.00% of predicted value FEV(1); 95% CI 8.05 to 31.92; Pâ€‰=â€‰0.001), lower intestinal inflammation (Calprotectin; Coefâ€‰=â€‰â€‰-â€‰16.53Â Î¼gÂ g(-1) feces; 95% CIâ€‰-â€‰26.80 toâ€‰-â€‰6.26; Pâ€‰=â€‰0.002) and required fewer antibiotics (IRRâ€‰=â€‰0.43; 95% CI 0.22 to 0.69; Pâ€‰=â€‰0.04) compared to children with Bacteroides-dominated microbiota who were less likely to have received LGG.

Authors' conclusions

The majority of pediatric CF patients in this study possessed a Bacteroides- or Bifidobacteria-dominated gut microbiota. Bifidobacteria-dominated gut microbiota were more likely to be associated with LGG-supplementation and with better clinical outcomes.

http://dx.doi.org/10.1186/s12890-022-02078-9

See also

BMC Pulm Med. 2022 Jul 28;22(1):287. doi: 10.1186/s12890-022-02078-9.

Keywords

Child; Probiotics; Supplementation; Oral; Immunoregulatory; pharmacological_intervention; Adult; Lactobacillus; Synbiotic;