

Probiotics as a dietary supplement may relieve pain in children with recurrent abdominal pain.

In collaboration with Cebam, Cochrane Belgium

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Clinical question:

Which dietary or pharmacological interventions are effective to treat recurrent abdominal pain in children?

Context:

Recurrent abdominal pain, including irritable bowel syndrome, is a condition affecting 4 to 25% of school-age children at some stage, severe enough to interfere with their daily lives. A whole range of dietary and pharmacological interventions have been suggested to alleviate pain and improve functioning.

This Cochrane Corner gives an overview of two Cochrane reviews, addressing the effectiveness of either dietary or pharmacological interventions for recurrent abdominal pain, as defined by the Rome III criteria. Dietary interventions were compared against placebo or no intervention, while pharmacological interventions were compared against placebo, no intervention, patients on a waiting list or standard care. The primary outcomes of these reviews were frequency, intensity, duration and improvement of pain. School performance, social or psychological functioning and quality of daily life were defined as secondary outcomes.

Summary of the results:

The review on dietary interventions identified 19 trials, including 1453 participants. The studies were subdivided into four categories: Probiotics-based interventions (13 studies), fibre-based interventions (4 studies), low FODMAP (fermentable oligosaccharides, disaccharides, monosaccharides and polyols) diets (1 study) and fructose restriction diets (1 study). The review on pharmacological interventions found 16 trials (1024 participants), studying treatments with antidepressants, antibiotics, antihistamines, antispasmodics, a dopamine receptor antagonist and treatment with a hormone.

Children receiving probiotics were more likely to have an improvement in pain at 0 to 3 months postintervention (7 studies, 722 participants), compared to placebo (placebo: 421 per 1000 vs probiotics: 542 per 1000, 95%CI* 438 to 642). In addition, they appeared to experience a decrease in both pain frequency (6 studies, 523 participants) and intensity (7 studies, 575 participants) at this time interval.

In 2 studies (136 participants), interventions with fibre did not result in an increased likelihood to have an improvement in pain at 0 to 3 months postintervention (placebo: 391 per 1000 vs fibre: 541 per 1000, 95%CI 372 to 701). Furthermore, no decrease in pain intensity could be demonstrated (2 studies, 135 participants). For low FODMAP and fructose restriction diets only one study could be identified, from which no reliable conclusions could be drawn.

The trials involving pharmacological interventions were too heterogeneous to be combined. Although some single studies found positive results, all of these studies had important weaknesses. None of the positive results have been reproduced in subsequent studies. Therefore, no convincing evidence was found to support the use of medication in the treatment of recurrent abdominal pain in children.

Secondary outcomes were reported variably and inconsistently, for which no overall estimate could be made. Adverse events were monitored by most studies, but no adverse events were reported.

Remarks:

Evidence concerning the use of probiotics was of moderate (likelihood of pain improvement) to low quality (pain frequency and intensity), while outcomes on the use of fibre-based interventions were of low quality. Reasons to reduce our confidence in the reported outcomes are heterogeneity between studies, imprecise results and an unclear risk of bias due to incomplete outcome data and selective reporting.

Conclusion:

Probiotics may reduce pain in children with recurrent abdominal pain. The effectiveness of fibre supplements could not be demonstrated. There is too little evidence to make firm conclusions about low FODMAP diets, fructose restriction diets or drug treatments.

Implications for practice: In children with recurrent abdominal pain, prescription of probiotics can be considered. There is however no reliable evidence to support medication use in these patients.

Access the full text of these reviews via the Cebam Digital Library for Health (www.cebam.be/nl/cdlh or www.cebam.be/fr/cdlh)

* CI: confidence interval

REFERENCES

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