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REVIEW ARTICLE

Use of fibers in childhood constipation treatment: systematic review with meta-analysis☆,☆☆

Q1 Patricia P. Mello[a,*], Diego A. Eifer[b,c], Elza D. Mello[a]

Q2 [a] Universidade Federal do Rio Grande do Sul (UFRGS), Programa de Pós Graduação em Saúde da Criança e do Adolescente, Porto Alegre, RS, Brazil
[b] Hospital de Clínicas de Porto Alegre (HCPA), Serviço de Radiologia, Porto Alegre, RS, Brazil
[c] Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, RS, Brazil

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KEYWORDS
Constipation;
Fiber;
Meta-analysis;
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Adolescent

Abstract
Objective: To gather current evidence on the use of fiber for constipation treatment in pediatric patients.
Source of data: Systematic review with meta-analysis of studies identified through Pubmed, Embase, LILACS and Cochrane databases published up to 2016.
Inclusion criteria: Randomized controlled trials; patients aged between 1 and 18 years and diagnosed with functional constipation receiving or not drug treatment for constipation; articles published in Portuguese, English, Spanish, French, and German in journals accessible to the researchers.
Synthesis of data: A total of 2963 articles were retrieved during the search and, after adequate evaluation, nine articles were considered relevant to the study objective. A total of 680 children were included, of whom 45% were boys. No statistical significance was observed for bowel movement frequency, stool consistency, therapeutic success, fecal incontinence, and abdominal pain with fiber intake in patients with childhood constipation. These results should be interpreted with care due to the high clinical heterogeneity between the studies and the methodological limitation of the articles selected for analysis.

UNCORRECTED PROOF

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☆☆ Study carried out at Universidade Federal do Rio Grande do Sul (UFRGS) and Hospital de Clínicas de Porto Alegre (HCPA), Porto Alegre, RS, Brazil.
* Corresponding author.
E-mail: patriciamellomed@gmail.com (P.P. Mello).

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Conclusions: There is a scarcity of qualified studies to evaluate fiber supplementation in the treatment of childhood constipation, generating a low degree of confidence in estimating the real effect of this intervention on this population. Today, according to the current literature, adequate fiber intake should only be recommended for functional constipation, and fiber supplementation should not be prescribed in the diet of constipated children and adolescents.
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PALAVRAS-CHAVE
Constipação;
Fibra;
Metanálise;
Crianças;
Pré-escolares;
Adolescentes

Uso de fibras no tratamento da constipação infantil: revisão sistemática com meta-análise

Resumo

Objetivo: Reunir evidências atuais sobre o uso de fibras no tratamento da constipação funcional em pacientes pediátricos.
Fontes dos dados: Revisão sistemática com metanálise de estudos identificados por pesquisa nas bases de dados Pubmed, Embase, LILACS e Cochrane publicados até o ano de 2016.
Critérios de Inclusão: Estudos controlados randomizados; pacientes com idade entre 1 a 18 anos com diagnóstico de constipação funcional em uso ou não de tratamento medicamentoso para constipação; artigos publicados em língua portuguesa, inglesa, espanhola, francesa e alemã em revistas acessíveis aos pesquisadores.
Síntese dos dados: Foram encontrados 2.963 artigos na busca e, após avaliação adequada, 9 artigos mostraram-se relevantes frente aos objetivos do estudo. Um total de 680 crianças foram incluídas, sendo 45% meninos. Não foi demonstrado significância estatística da frequência evacuatória, da consistência evacuatória, do sucesso terapêutico, da incontinência fecal e da dor abdominal com o uso de fibras nos pacientes com constipação infanto-juvenil. Esses resultados devem ser interpretados com atenção devido à alta heterogeneidade clínica entre os estudos e à limitação metodológica dos artigos analisados.
Conclusões: Existe uma grande falta de estudos qualificados para avaliar a suplementação de fibras no tratamento da constipação infanto-juvenil, gerando um baixo grau de confiança para se estimar o efeito real dessa intervenção na população em questão. Até esse momento, conforme a literatura atual, deve-se apenas recomendar a ingestão adequada de fibras na constipação funcional, não se podendo prescrever a suplementação de fibras na dieta das crianças e adolescentes constipados.
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Introduction

In pediatrics, constipation is defined as a delay in or resistance to evacuate, with a history of two or fewer bowel movements per week, associated with fecal incontinence, fecal retention, and/or pain during bowel movement.[1,2] It is classified as functional when, after clinical evaluation and physical examination of the pediatric patient, it cannot be attributed to any intestinal or extra-intestinal disorder, according to the ROME IV consensus.[2]

Functional constipation is the result of voluntary fecal retention by the child or adolescent related to the fear of evacuating. After frequent unsuccessful attempts to evacuate, a vicious cycle is created: the greater the refusal to evacuate, the greater the stool retention, which will dry out and increase in volume, thus causing more discomfort.[1,3]

Constipation is frequently observed in the pediatric age group, being the main complaint in 3–5% of consultations with pediatricians and in 25% of consultations with pediatric gastroenterologists.[4,5] Worldwide, the prevalence ranges from 3% to 29.6%[6,7]; in Brazil, it ranges between 17.5 and 38.4%,[4,8] due to the different diagnostic criteria used for the definition of functional constipation. Its peak incidence occurs during the sphincter training phase, affecting both genders and with no differences between social classes,[1,2] homogeneously affecting all age ranges.[7] When chronic, functional constipation has a negative impact on the quality of life of pediatric patients and their families.[5,6]

A low dietary fiber intake has been considered a risk factor for the development of functional constipation,[9] and the increase in fiber consumption is an important factor in its prevention and treatment.[4,10] Dietary fibers are divided into insoluble and soluble. Insoluble fibers increase the fecal volume because they resist the action of digestive enzymes and the colonic microflora, absorbing water from the intestinal lumen. Soluble fibers, fermented by the intestinal flora, release adsorbed water and produce fatty acids that result in the co-absorption of electrolytes and fecal water.[11]

Usually, the initial treatment of constipation in children and adolescents consists in the prescription of fibers by

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