

Issue 92

In a nutshell

There is considerable evidence that probiotics are helpful in treating and preventing diarrhoea of a wide varieties of origins.

This includes antibiotic-associated and infective diarrhoea. Doctors can make probiotics a regular part of their prescribing in cases of diarrhoea.

Probiotics and diarrhoea

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NUTRITION RESEARCH REVIEW

Probiotics are microorganisms - such as bifidobacteria and lactobacilli - which have potential physiological functions and benefits when they are present in the bowel and vagina.

Study one: Preventing diarrhoea in hospitalised children

Lactobacillus supplementation significantly reduced the incidence of nosocomial diarrhoea in hospitalised infants, especially diarrhoea from rotavirus gastroenteritis. These are the findings of a new study from Poland.

Subjects: 81 children (1-36 months of age) hospitalised for reasons not involving diarrhoea.

Method: Randomised, double-blind, placebo-controlled trial in which children received either Lactobacillus supplementation or placebo throughout their hospital stay.

Results: There was a significant reduction in the risk of nosocomial diarrhoea and rotavirus gastroenteritis, but not of the prevalence of rotavirus infection. See Table.

Reference: Szajewska H et al. Efficacy of Lactobacillus GG in prevention of nosocomial diarrhea in infants. J Pediatr 2001;138:361-5

Study two : Probiotic yogurt is better than ordinary yogurt

Ordinary yogurt is not as effective in preventing diarrhoea in healthy children as milk fermented with Lactobacillus, according to French research.

Subjects: 928 healthy children (6-24 months of age).

Method: Randomised, double-blind controlled trial comparing standard yogurt with yogurt cultured with Lactobacillus casei. Children took the yogurts for four months.

Results: Diarrhoea was significantly less common in the probiotic group (15.9%) than the ordinary yogurt group (22%, p = 0.03).

Reference: Pedone CA et al. Multicentric study of the effect of milk fermented by Lactobacillus casei on the incidence of diarrhoea. Int J Clin Pract 2000;54:568-71

Table: Effect of Lactobacillus supplementation on diarrhoea in children

	Lactob.	Placebo	Rel.risk	p value
Diarrhoea (95% CI)	6.7%	33.3%	0.2 (0.06 -0.6)	p < 0.05
Rotav. infection (95% CI)	20.0%	27.8%	0.72 (0.33-1.56)	NS
Rotav. g/enteritis (95% CI)	2.2%	16.7%	0.13 (0.02-0.79)	p < 0.05

Study three : Radiation diarrhoea

Milk supplemented with Lactobacillus is superior to ordinary yogurt in the prevention of radiation diarrhoea, according to Hungarian research.

Subjects: 206 patients undergoing radiotherapy.

Method: Randomised, double-blind controlled trial.

Results: The patients given Lactobacillus-supplemented

milk had significantly less self-reported of diarrhoea ($p < 0.001$) and the consistency of the faeces as assessed by the research investigators was higher ($p < 0.05$) than those patients taking ordinary yogurt.

Reference: Urbancsek H et al. Results of a double-blind, randomized study to evaluate the efficacy and safety of Antibiofilus in patients with radiation-induced diarrhoea. Eur J Gastroenterol Hepatol 2001;13:391-6

Comments

These trials add to a considerable number of existing studies that show that probiotic supplementation is helpful both in preventing and in treating diarrhoea of various causes.

For example: diarrhoea associated with taking antibiotics, radiotherapy, HIV infection, viral and bacterial gastroenteritis, diarrhoea contracted from high risk environments such as hospitals and day care centres, traveller's diarrhoea etc. Probiotics are helpful in preventing and treating diarrhoea caused by Clostridium difficile, a particularly unpleasant problem that can progress to the serious and sometimes fatal illness of pseudomembranous colitis.

Other studies published or currently in progress involve probiotics as therapy for vaginal thrush, inflammatory bowel disease, impaired immune response (e.g. in AIDS), and prevention of colon and bladder cancer.

There are several possible reasons for such beneficial effects. One reason is the fact that probiotic organisms adhere well to the bowel wall, thus preventing toxic organisms from binding there. Direct competition between the probiotic organisms and the pathogens for nutrients and 'living space' within the bowel lumen is another mechanism, as is the beneficial effects of probiotic organisms on metabolic pathways, including those producing carcinogenic compounds.

At present, the evidence is strongest in relation to diarrhoea, but not so strong in relation to recurrent thrush. Probiotics have fortunately so far proved to be a safe form of treatment.

Practising clinicians should therefore feel comfortable to make probiotics a regular part of their prescribing in cases of diarrhoea. We await with interest further studies for other potential applications.

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