

KiDrug Alert

A Critical Review of:

"Probiotic effects on cold and influenza-like symptom incidence and duration in children"

Leyer GJ, Li S, Mubasher ME, Reifer C, Ouwehand AC

Pediatrics. 2009 Aug;124(2):e172-9.

SUMMARY OF FINDINGS

Fever, runny nose and cough are common childhood conditions that most of us take for granted as part of growing up and tell parents to wait it out. There is not much the medical community can offer as treatment, except advice on symptom control for fever.

Researchers at Wisconsin tried to study the effects of probiotics as a prophylactic measure to reduce the incidence and duration of flu like symptoms in 326 healthy children between 3 and 5 years of age who did not receive influenza vaccinations. They excluded children with preexisting diseases, lactose intolerance and those currently taking probiotics. Children enrolled in the study were prohibited from taking any food or supplement products containing probiotics or any traditional medicine during the study.

The children were randomized in to 3 groups: The placebo group, *Lactobacillus acidophilus* group and the combination (*L. acidophilus* and *Bifidobacteria lactis*) group and received the placebo, *L. acidophilus* or the combination with a glass of milk twice a day from November 2005 to May 2006. The frequency and duration of fever, cough, and rhinorrhea, of physicians' visits, antibiotic prescriptions and absenteeism were monitored.

Probiotics were shown to reduce the incidence of fever (single 53%, combination 73%) coughing (41% and 62%) and rhinorrhea by 28% and 59%. The duration of these symptoms were also reduced significantly by both the single (32%) and the combination (48%) probiotic groups. This also translated in to less antibiotic use (68% for the single strain and 84% for the

combination groups) and reduced number of missed school days.

The authors concluded that "daily dietary probiotic supplementation for 6 months was a safe effective way to reduce fever, rhinorrhea, and cough incidence and duration and antibiotic prescription incidence, as well as the number of missed school days attributable to illness, for children 3 to 5 years of age".

COMMENTS

Upper respiratory infections with fever, runny nose and cough in children are considered minor illness by the medical community. However, it is a major source of concern for many parents with young children as they feel frustrated about the medical community's lack of 'cure' or treatment for it. These infections not only clog the health care system in winter but also lead to significant absenteeism from school and work as parents often have to take time off to care for their ill child. The staggering number of cough and cold remedies out in the market and their increasing sales are a testament for parental fervour in treating upper respiratory infection.

Probiotics are on the forefront of medical literature as one of the adjuvant modalities of treatment for a multitude of common illnesses. Live microorganisms that produce health benefits to the host are defined as probiotics. Almost all probiotics have to be taken regularly to reap beneficial effects. *Lactobacillus acidophilus* NCFM is used to ferment milk and is found in many dairy products. It is very safe to the host, survives stomach acid and is good at adhering to the intestines. *Bifidobacteria lactis* Bi-07 is another bacteria with similar properties that is often added to dairy products and infant formulas.

This paper explores the benefits of probiotics as a preventive strategy and shows significant benefits in reducing the incidence and duration of flu like symptoms in the preschool age group. The researchers used probiotics powders with 5.0×10^9 colony-forming units (CFUs) per g, for a daily dose of 1.0×10^{10} CFUs per child to demonstrate

significant beneficial effects. However, the daily dose of probiotics have to be given throughout the winter months to reduce upper respiratory tract infections in children. Although probiotics have been around for several years, many parents and physicians may be reluctant to add another 'regular medicine' for young children as a preventative measure.

A recent study examined 10 commercially available yogurts and found that good colony growth of Lactobacillus was noted on all cultures, ranging from 4.8×10^9 to 9.5×10^{10} CFU in a single 100mL serving. This information should help physicians and parents who are reluctant to use the probiotic powders, but would be happy to modify meal choices as a preventive measure to reduce upper respiratory infections in children.

Savithiri Ratnapalan MBBS, M Ed, MRCP,
FRCPC, FAAP
Department of Paediatrics and Dalla Lana School
of Public Health,
Division of Emergency Medicine, Clinical
Pharmacology & Toxicology
The Hospital for Sick Children
Toronto, Canada

*See article by Leyer and associates at
Pediatrics 2009 Aug;124(2):e172-9.*

REFERENCES

1. Leyer GJ, Li S, Mubasher ME, Reifer C, Ouwehand AC. Probiotic effects on cold and influenza-like symptom incidence and duration in children. *Pediatrics*. 2009 Aug;124 (2):e172-9.
2. Sanders ME, Klaenhammer TR. Invited Review: The Scientific Basis of Lactobacillus acidophilus NCFM Functionality as a Probiotic. *Journal of Dairy Science* 2001 Vol. 84 No. 2 319-331.
3. Dunlap BS, Yu H, Elitsur Y. The Probiotic Content of Commercial Yogurts in West Virginia. *Clin Pediatr (Phila)*. 2009 Jun;48(5):522-7.

*Comments for this review can be submitted to
the Editorial office at editor@cjcp.ca*