Motherisk Update

Taking probiotics during pregnancy

Are they useful therapy for mothers and newborns?

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ABSTRACT

QUESTION Recently, several of my pregnant patients have asked me about using probiotics during pregnancy. Is there any evidence that these innocuous bacteria work effectively?

ANSWER An increasing body of evidence suggests that probiotics are effective for treating bacterial vaginosis and allergic reactions. Most probiotics available in Canada, however, are of dubious quality, and, for many claimed indications, there is no proof of effectiveness yet.

RÉSUMÉ

QUESTION J'ai reçu récemment de nombreuses questions de patientes enceintes concernant l'utilisation de probiotiques durant la grossesse. Existe-t-il des données scientifiques démontrant l'efficacité de ces bactéries inoffensives?

RÉPONSE Un nombre grandissant de données scientifiques font valoir que les probiotiques sont efficaces dans le traitement des vaginoses bactériennes et des réactions allergiques. Par ailleurs, la majorité des probiotiques sur le marché au Canada sont de qualité douteuse et, pour de nombreuses autres indications, aucune donnée ne prouve encore leur efficacité.

Probiotics have been described as live microorganisms that, when administered in adequate amounts, confer a health benefit on the host. In Canada, most so-called probiotic products have never been clinically tested; only two proven probiotic products are available: the eight-strain VSL#3 for inflammatory bowel disease and Activia yogurt containing *Bifidobacterium lactis* DN 001 for regularity.

A number of products seem to be associated with favourable effects, such as *Lactobacillus rhamnosus* GG (ConAgra), *B lactis* BB12 with *Lactobacillus acidophilus* La5 (Chr Hansen), and *Lactobacillus reuteri* SD2112 (Biogaia), all of which are used to treat diarrhea.[1-3] These and other strains, such as *L rhamnosus* GR-1, *L reuteri* RC-14 (Chr Hansen), and *Saccharomyces boulardii* LYO (Biocudex) for urogenital health,[4] *Lactobacillus plantarum* 299V (Lallemand) for reducing hospital-acquired infections,[5] and *Lactobacillus casei* Shirota (Yakult) for perhaps reducing recurrence of bladder cancer,[6] are in various stages of entering the market.

Role of probiotics

Studies suggest that good nutrition during pregnancy improves the chances of having a healthy baby who will be at lower risk of diseases, such as diabetes and heart disease, later in life.[7] The case for

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folic acid supplements emerged from our increased knowledge of fetal development. The case for consuming live bacteria, although it might not be well received by many women, also has some scientific merit.

Bacterial vaginosis, a condition in which lactobacilli are displaced from the vagina by inflammation-causing pathogens,[7] has been suggested as a factor that increases risk of preterm labour,[8] although there is controversy about this. Daily use of oral gelatin capsules containing dried viable *L rhamnosus* GR-1 and *L reuteri* RC-14 has been shown to decrease risk of bacterial vaginosis and maintain normal lactobacilli vaginal flora.[9,10] In animal studies, these strains were found to be safe during pregnancy and to enhance the health of mothers and newborns.[11] Studies are under way in Toronto, Ont, to test the effects of these strains on bacterial vaginosis in pregnant women at risk of preterm labour.

These lactobacilli might also have a role in preventing vaginal colonization by group B streptococci, organisms that can cause serious illness and even death in newborns. Certain lactobacilli can inhibit growth and adhesion of streptococci in vitro,[12,13] but whether they can do this in vivo is untested.

The second promising area of research is use of probiotics to prevent allergic reactions. Studies using *L rhamnosus* GG and *B lactis* BB12 have shown that atopic dermatitis, a condition that causes severe skin rashes in up to 15% of babies, can be prevented in 50% of cases if mothers ingest probiotics during pregnancy and newborns ingest them during the first 6 months of life.[14,15] This is believed to be due to a reprogramming of the newborn's immune system or altered proportions of plasma-neutral lipids and alpha-linolenic acid.[15] *Lactobacillus rhamnosus* GG is not available in Canada, however, and probiotics are not permitted for use in newborns. Also, a few cases of asthma arose in the Finnish study,[16] suggesting more studies are needed.

Probiotics during pregnancy have an excellent safety record.[17] Some researchers argue that the substantial changes in diet that have come about in modern times are denying humans natural replenishment of the beneficial bacteria, that we have been ingesting for ages.[18]

What to recommend

Currently, few of the world's proven probiotics are available in Canada. Canadians buy products of dubious quality.[19] For consumers to get access to high-quality, clinically proven probiotics, they have to import them from the United States and Europe. For mothers whose previous babies suffered from atopic dermatitis, daily use of *L rhamnosus* GG might be worth considering. It is important for family physicians to be up-to-date on advances in probiotics. As with other therapeutics, scientifically proven, active strains of probiotics should be the only products approved by Health Canada and should be used only for conditions in which efficacy is achieved.

Acknowledgment

The Canadian Research and Development Centre for Probiotics was established with a grant from the Ontario Research and Development Challenge Fund. This research is supported in part by the Canadian Institutes for Health Research and the Natural Sciences and Engineering Research Council.

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