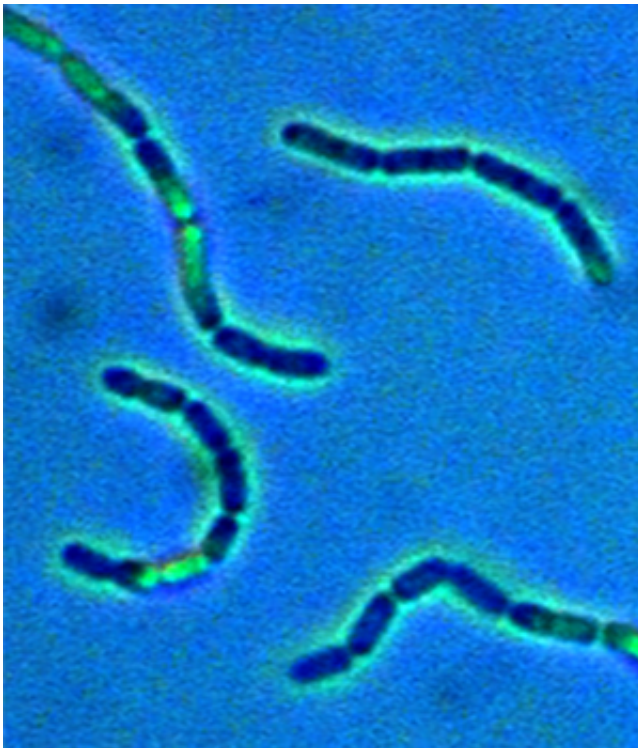


In very ill, probiotics don't prevent 'superbugs' from colonizing intestinal tract

August 27 2015



The probiotic *Lactobacillus rhamnosus* GG (above) was no more effective than regular medical care in preventing the colonization of superbugs in the gastrointestinal tracts of critically ill patients, according to a pilot study by Washington University researchers. Credit: Washington University in St. Louis

Compared with routine medical care, probiotics administered to critically ill patients in intensive care units showed no benefit in preventing the colonization of drug-resistant microbes in the intestinal

tract, according to new research at Washington University School of Medicine in St. Louis.

Probiotics—live microorganisms believed to help restore the balance of intestinal bacteria and increase resistance to harmful germs—were given to patients twice daily for up to two weeks. But they were no more effective than not giving probiotics, the researchers report Aug. 27 in *Infection Control & Hospital Epidemiology*.

"Probiotic use is an intriguing topic," said Jennie H. Kwon, DO, lead author of the study and a clinical researcher in the Division of Infectious Diseases. "With fewer therapies available to treat multidrug-resistant organisms, innovative methods to prevent or eliminate gastrointestinal colonization are necessary."

Drug-resistant "superbugs" pose a serious risk to hospitalized patients—particularly those in ICUs—because the microbes increase the risk of hard-to-treat infections that can spread easily.

The pilot study followed 70 patients admitted to ICUs at Barnes-Jewish Hospital in St. Louis. Researchers studied whether the probiotic *Lactobacillus rhamnosus* GG could prevent the intestinal colonization of superbugs such as *Clostridium difficile* (*C. diff*), vancomycin-resistant *Enterococcus* (VRE) and *Pseudomonas aeruginosa*.

Patients were randomly assigned to receive probiotics and routine care or routine care alone. The researchers then monitored whether the microbes took up residence in the intestinal tract—a first step to developing a full-blown infection.

The data showed that the drug-resistant microbes colonized the intestinal tracts of 10 percent of patients in the probiotic group and 15 percent in the standard-care group—a difference that was not statistically

significant.

However, Kwon emphasized the study's limitations: small patient sample size, brief length of patient follow-up, and use of a single type and dose of probiotic. Additionally, the researchers confined the study to gastrointestinal bacteria and did not assess the possible impact of probiotics on preventing the colonization of superbugs in the stomach or the upper airway.

"Although our findings suggest that probiotics do not help prevent gastrointestinal colonization with drug-resistant organisms in critically ill patients, further study is necessary in this field," Kwon said.

To that end, Kwon is part of a Washington University research team evaluating probiotics in hospitalized patients who are not in ICUs.

More information: Jennie H. Kwon, Kerry M. Bommarito, Kimberly A. Reske, Sondra M. Seiler, Tiffany Hink, Hilary M. Babcock, Marin H. Kollef, Victoria J. Fraser, Carey-Ann D. Burnham, Erik R. Dubberke. "Randomized Controlled Trial to Determine the Impact of Probiotic Administration on Colonization With Multidrug-Resistant Organisms in Critically Ill Patients." Web (August 27, 2015).

Provided by Washington University School of Medicine

Citation: In very ill, probiotics don't prevent 'superbugs' from colonizing intestinal tract (2015, August 27) retrieved 4 May 2024 from <https://medicalxpress.com/news/2015-08-probiotics-impact-gastrointestinal-colonization-drug-resistant.html>

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