Preventing Infection by Drug-Resistant Bacteria

The study was designed to assess the use of probiotics to reduce resistant bacteria.

**Description:** The Probiotics for Prevention of Infection by Multiresistant Bacteria project conducted a randomized controlled trial to examine the role of probiotics for reducing resistant bacteria in high-risk patients.

**Relevance:** Drug-resistant bacteria are a major cause of severe infections in health care institutions in the United States. A strategy for reducing and containing resistant bacteria has tremendous public health impact.

**Results:** The project demonstrated the feasibility and safety of conducting a randomized trial of probiotics for drug-resistant bacteria in high-risk patients. The trial determined the effect of a probiotic versus a placebo in eradicating intestinal and nasal colonization. A subsequent pilot study looked at sustained eradication and the reduction in infection over six months. Emerging literature suggests that the beneficial impact of a probiotic is unlikely to remain beyond a few weeks of administration, and this project supports those findings.

Data from this study has been used to apply for federal funding to complete larger randomized trials. Based on this study, the principal investigator received a VA Merit Grant and is leading a large randomized controlled trial on probiotics at the Veterans Hospital in Madison. The PI collaborated with UW faculty in the department of bacteriology, and gave presentations at community hospitals throughout the state on the role of probiotics in infectious diseases. The PI has received funding from the National Institutes of Health to conduct a randomized trial on probiotics for resistant bacteria in older adults and is collaborating with investigators at Medical College of Wisconsin to examine probiotics for prevention of infections in pregnant women. A pending R21 application in this area is under review.

**Dissemination:** Abstract presented at the Association for Professionals in Infection Control annual national meeting, 2013.