

INFECTION

Lactobacillus probiotic could prevent recurrent UTI

Urinary tract infections (UTIs) are common in women, of whom nearly one-third will develop frequent recurrent infections, which are often treated with repeated courses of antimicrobial agents. Now, a vaginal probiotic pessary has been shown to halve the rate of recurrent UTIs in UTI-prone women. It could be used as a novel nonantimicrobial preventative treatment strategy, according to research published in *Clinical Infectious Diseases*.

The vagina is predominantly colonized by *Lactobacillus* spp. Changes to the normal protective vaginal microbiome are thought to contribute to the risk of UTIs. Previously, UTIs have been associated with depletion of the vaginal lactobacilli. Ann Stapleton and colleagues therefore reasoned that repletion of the bacteria normally associated with the vaginal microbiome (lactobacilli) could reduce colonization by harmful bacteria and minimize UTI risk.

For their double-blind placebo-controlled phase II trial, Stapleton and co-workers enrolled 100 young women (aged 18–40 years) with a history of recurrent UTI. Study participants were treated with antimicrobial agents—the current standard of care—for acute UTI and then randomly assigned to receive either an intravaginal suppository

probiotic of *L. crispatus* CTV-05 or placebo once daily for 5 days and then once weekly for 10 weeks. At week 1 and 10 of follow up, urine samples and vaginal swabs were collected, and bacterial culture and real-time quantitative PCR used to monitor the levels and pattern of bacterial colonization in the vagina.

Recurrent UTI occurred in 15% of women receiving the vaginal probiotic treatment compared with 27% of the placebo group (relative risk 0.5, 95% CI 0.2–1.2). High levels of *L. crispatus* CTV-05 vaginal colonization ($\geq 10^6$ 16S RNA gene copies per swab) were achieved. Moreover, only those women who achieved high-level *L. crispatus* vaginal colonization throughout the follow-up period had a substantial reduction in risk of recurrent UTI; women receiving placebo did not have this risk reduction irrespective of their colonization pattern. The vaginal probiotic was well tolerated, with the most common adverse effects being vaginal discharge, itching or moderate abdominal discomfort.

“This antimicrobial-sparing, well-tolerated intervention compares favorably with historical data regarding antimicrobial prophylaxis,” write the study authors, who stress that larger efficacy trials in the general population are needed



© Sebastian Kaulitzki/Dreamstime

to support their findings. The authors add that further research could provide useful information about which women would benefit the most from this type of intervention.

Katrina Ray

Original article Stapleton, A. E. Randomized, placebo-controlled phase 2 trial of a *Lactobacillus crispatus* given intravaginally for prevention of recurrent urinary tract infection. *Clin. Infect. Dis.* 52, 1212–1217 (2011)