



Effective Health Care

Treatment and Prevention of Recurrent Bladder Infections in Women

Nomination Summary Document

Results of Topic Selection Process & Next Steps

- *Treatment and Prevention of Recurrent Bladder Infections in Women* was found to be addressed by one Cochrane systematic review and four additional systematic reviews and meta-analyses. Given that these existing systematic reviews and meta-analyses cover this nomination, no further activity will be undertaken on this topic.
 - Jepson RG, Williams G, Craig JC. Cranberries for preventing urinary tract infections. Cochrane Database Syst Rev 2012; 10:Cd001321.
 - Beerepoot MA, Geerlings SE, van Haast EP, et al. Nonantibiotic prophylaxis for recurrent urinary tract infections: A systematic review and meta-analysis of randomized controlled trials. J Urol Dec 2013; 190(6):1981-1989.
 - Wang CH, Fang CC, Chen NC, et al. Cranberry-containing products for prevention of urinary tract infections in susceptible populations: A systematic review and meta-analysis of randomized controlled trials. Arch Intern Med Jul 9 2012; 172(13):988-996.
 - Grin PM, Kowalewska PM, Alhazzan W, et al. Lactobacillus for preventing recurrent urinary tract infections in women: Meta-analysis. Can J Urol Feb 2013; 20(1):6607-6614.
 - De Vita D, Antell H, Giordano S. Effectiveness of intravesical hyaluronic acid with or without chondroitin sulfate for recurrent bacterial cystitis in adult women: A meta-analysis. Int Urogynecol J Apr 2013; 24(4):545-552.

Topic Description

Nominator(s): Individual

Nomination Summary: The nominator is interested in this topic since his/her mother-in-law has recurrent bladder infections. The nominator wants AHRQ to consider this topic since it will provide him/her with more detailed information in making an informed decision about the treatment options for his/her mother-in-law. The nominator indicates that he/she is debating about whether to have his/her mother-in-law stop taking antibiotics and consider more invasive or intensive treatment options.

Staff-Generated PICO

Population(s): All women with recurrent uncomplicated bladder infection not associated or caused by catheters

Intervention(s): Medical therapies (e.g., antibiotics, self-directed antibiotics, hormonal therapy), surgical treatments, complementary and alternative medicine, and behavioral

interventions (e.g., lifestyle changes)

Comparator(s): Those listed above (i.e., compared to each other), placebo, no treatment

Outcome(s): Reduction in the number of bladder infections, time to recurrence of bladder infection, complications of bladder infections, hospitalizations, need for intravenous antibiotics, health-related quality of life (HRQoL), adverse events from the interventions above

Key Questions from Nominator: What is the comparative effectiveness of different treatments for recurrent bladder infections in women?

Considerations

- The topic meets EHC Program selection criteria. (For more information, see <http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/>.)
- There is a high risk for the development of multi-drug resistant bacteria due to the frequent use of antibiotics for the treatment of urinary tract infections (UTIs). An improved understanding of the comparative effectiveness of different treatments could help in the selection of an effective treatment to prevent recurrent UTI for individual patients and could potentially decrease adverse outcomes from the development of such resistant bacteria.
- Topic was found to be addressed by the following systematic reviews and meta-analyses:
 - A 2013 systematic review titled *Nonantibiotic prophylaxis for recurrent urinary tract infections: A systematic review and meta-analysis of randomized controlled trials* assessed the effectiveness, tolerability and safety of non-antibiotic prophylaxis in adults with recurrent UTI. The review included RCTs published by April 2013. The review looked at the prophylactic use of oral immunostimulant OM-89, vaginal vaccine Urovac® (not FDA approved), vaginal estrogens, cranberries, acupuncture, oral estrogens and lactobacilli for recurrent UTI. The meta-analysis found that cranberries decreased UTI recurrence (2 trials, sample size 250, Jadad score 4, RR 0.53, 95% CI 0.33-0.83). It also reported that vaginal estrogens showed a trend toward preventing UTI recurrence (2 trials, sample size 201, Jadad score 2.5, RR 0.42, 95% CI 0.16-1.10) but oral estrogens did not decrease the rate of UTI recurrence. The authors cautioned that while pooled findings for some interventions were sometimes statistically significant, pooled findings for other interventions should be considered tentative until corroborated by more research.
 - A 2012 Cochrane review titled *Cranberries for preventing urinary tract infections* addressed the use of cranberries for the prevention of UTI, including recurrent UTI. Compared to placebo, water or no treatment, cranberry products were not effective in reducing the number of symptomatic UTIs. The review included a meta-analysis of RCTs and quasi-RCTs published through July 2012.
 - A 2012 systematic review titled *Cranberry-containing products for prevention of urinary tract infections in susceptible populations: A systematic review and meta-analysis of randomized controlled trials*, addressed use of cranberry-containing products for prevention of UTI using meta-analysis. The review included RCTs published up to November 2011. Although no restrictions were made on the population in the inclusion criteria for this review, a subgroup analysis showed that cranberry-containing products were effective in women with recurrent UTIs compared to placebo or non-placebo controls.

- A systematic review titled *Lactobacillus for preventing recurrent urinary tract infections in women: Meta-analysis* focused on determining the efficacy of probiotic *Lactobacillus* species in preventing recurrent UTI. The probiotic was shown to be safe and effective compared to a control. Among the five studies included in the meta-analysis, one study administered *Lactobacillus* orally while the remaining four studies administered it intra-vaginally. This review included RCTs published by July 2012.
- A meta-analysis, titled *Effectiveness of intravesical hyaluronic acid with or without chondroitin sulfate for recurrent bacterial cystitis in adult women: A meta-analysis*, evaluated the effect of intravesical hyaluronic acid (HA) and hyaluronic acid and chondroitin sulphate (HA-CS) combination therapy in recurrent bacterial cystitis in adult women. Randomized trials and non-randomized trials were included in the analysis. No search date for the literature was stated in the abstract. HA and HA-CS therapy were found to be effective in reducing cystitis recurrence and mean UTI recurrence time.