

Evidence-Based Practice Critically Appraised Topic

Cranberry Products and Urinary Tract Infections

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Clinical Scenario

A 58 year old white female patient presents to the clinical with complaints of urinary frequency and urgency and dysuria x 4 days. Urine: positive for leukocytes and red blood cells. Results indicate urinary tract infection. Urine culture results pending.

Clinical Question

Among susceptible patients with urinary tract infections (UTIs), are cranberry juice or cranberry products effective in preventing or treating urinary tract infections versus placebo?

Articles

Jepson RG, Craig JC. Cranberries for preventing urinary tract infections. Cochrane

Database of Systematic Reviews 2008, Issue 1. Art. No.: CD001321. DOI:

10.1002/14651858.CD001321.pub4

Jepson, R. (2010). Cranberries for treating urinary tract infections. *Cochrane Database of*

Systematic Reviews, (9), Retrieved from EBSCOhost.

Summary and Appraisal of Key Evidence

Study 1 Jepson & Craig (2009) completed randomized controlled trials (RCTs) or quasi-randomized controlled trials to assess the effectiveness of cranberry products in preventing UTIs in susceptible populations, providing Level 1, Grade A level of evidence. They independently assessed and extracted information on methods, participants, interventions and outcomes which consisted of symptomatic and asymptomatic UTIs, side effects and adherence to therapy. Types of participants included susceptible men, women, or children who had a history of recurrent lower UTIs, elderly men and women, participants needing catheterization, pregnant women, participants with indwelling catheters and participants with an abnormality of the urinary tract.

Ten studies (n+1049, five cross over, five parallel groups) were included. Seven studies evaluated cranberry/cranberry lingonberry juice versus placebo, juice or water and four studies evaluated cranberries tablets versus placebo (one study evaluated both juice and

tablets). Cranberry products significantly reduced the UTI incidence in women with recurrent UTIs, than elderly men and women or people requiring catheterization. Only one reported a significant result for the outcome of symptomatic UTIs. Side effects were common in all studies and a high incidence of dropouts/withdrawals were noted. Types of interventions for the prevention of UTIs included cranberry juice or cranberry products (e.g. cranberry capsules) given for at least one month. Outcomes measured included the number of UTIs in each group, adherence to therapy and side effects.

Study 2 Jepson & Craig (2009) completed randomized controlled trials or quasi-randomized controlled trials to assess the effectiveness of cranberry products in the treatment of UTIs in women, men and children, providing Level 1, Grade A level of evidence. However, study failed to mention the number of participants. They wished to test the hypotheses: cranberry juice and other cranberry products are more effective than placebo/no treatment for the treatment of UTIs and cranberry juice and other cranberry products are more effective than any other therapy for treatment of UTIs. Titles and abstracts of studies that were potentially relevant to the review were screened by one author. Two authors independently assessed the studies to determine whether they met the inclusion criteria and further information was sought from them to where papers contained insufficient information to make a decision about eligibility.

Intervention for the studies included cranberry juice or cranberry products given for at least five days. Outcomes included number of symptomatic and asymptomatic UTIs in each group at the end of treatment, reduction in severity of symptoms, adherence to therapy and side effects. Inclusion criteria included men, women and children with one of the following: a symptomatic UTI, a symptomatic upper UTI or an asymptomatic UTI. However, no studies were found which fulfilled all of the inclusion criteria. Lack of relevant outcomes resulted in two studies to be excluded. Two studies are currently being undertaken.

Results

The relevance of these studies indicates that cranberry products can be effective in reducing UTIs but possibly only in certain populations. There is some evidence to recommend cranberry juice for prevention of UTIs in women with symptomatic UTIs. The evidence is inconclusive as to whether cranberry products are effective for prevention of UTIs in older men and women and people with neuropathic bladder. The studies also revealed that cranberry juice may not be accepted over long periods of time due to the number of dropouts/withdrawals from some of the studies. No evidence regarding the amount, concentration or length of use for effective intervention was indicated.

No RCTs have been performed to assess the effectiveness of cranberry juice or products for the treatment of UTIs. Thus, there is no evidence to suggest that cranberry juice or products are effective in treating UTIs at this time.

Clinical Bottom Line

From the results of these two studies, cranberry products are recommended for the prevention of UTIs in women with symptomatic UTIs. Cranberry products are not recommended for the prevention of UTIs in older people (both men and women) and people with neuropathic bladder. Cranberry juice or cranberry products would not be indicated for the treatment of UTIs in any population. These studies are relevant to clinical practice today because it is estimated that symptomatic UTIs occur in up to 30% women at some stage during their lives. UTIs occur 50 times more common in adult women than in adult men. UTIs are one of the most common medical conditions requiring outpatient treatment. Complications necessitate well over one million hospital admissions annually in the US. Measures of prevention could lead to a reduction of occurrences and complications associated with UTIs.

Implications for Practice

I would highly recommend using cranberry juice and cranberry for prevention of UTIs for women with symptomatic UTIs. I would probably consider using cranberry juice or products for prevention of UTIs in the elderly population or for patients with neuropathic bladder. The study did not reveal any risks with using cranberry juice or products. I would not consider using cranberry juice or products in treating UTIs with any of my patients due to lack of evidence. More research is needed to assess the effectiveness of this treatment.

References

Jepson RG, Craig JC. Cranberries for preventing urinary tract infections. Cochrane

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