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Cranberry Capsules Reducing the Incidence of What?

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To the Editor:

We are writing to comment on “Effectiveness of Cranberry Capsules to Prevent Urinary Tract Infections (UTI) in Vulnerable Older Persons: A Double-Blind Randomized Placebo-Controlled Trial in Long-Term Care (LTC) Facilities” by Caljouw et al.¹ The authors concluded that taking cranberry capsules twice daily reduces the incidence of clinically defined urinary tract infection (UTI) in individuals at high risk. No reduction was found in low risk individuals or in individuals when the use of a “strict” UTI definition was applied.¹ We have concerns with the validity and specificity of both the clinical and strict UTI definitions employed in this trial.

A clinical UTI required the presence of only one specific or non-specific sign or symptom, OR a positive result on urinary dipstick (nitrite, leukocyte esterase) or culture, OR UTI reported in the medical record, OR simply the prescription of an antimicrobial agent. The strict definition required the presence of one of the specific or non-specific signs or symptoms PLUS a positive urinary dipstick or culture. The specific signs or symptoms included: dysuria, urinary frequency, hematuria, temperature >37.9°C or 1.5°C above baseline, chills, pain in the abdomen, foul smell, nausea, or vomiting. Nonspecific symptoms included: anorexia, fatigue reduced mobility, and signs of delirium (e.g., confusion, deterioration in mental or functional status). The authors justified the use of this definition by noting that the diagnosis of UTI in the LTC setting is challenging. While it is true that the diagnosis of UTI is challenging and relies on consensus criteria, it is also true that a broad consensus exists regarding what is not a UTI. For example, the presence of a positive urinary test result in the absence of any other symptom or status change is *asymptomatic bacteriuria* (ASB). An extensive body of evidence confirms that there is no

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benefit to treating this condition with antimicrobials, and in fact treatment of ASB not only can, but does lead to direct patient harm via resistance, risk of adverse drug events, and *C difficile* infection.²⁻⁴ It is an unfortunate and dangerous myth that non-specific signs and symptoms, with or without positive urinary test results, rule in the diagnosis of UTI in frail older adults. Any number of conditions or medications could cause this combination of findings. By using such a nonspecific definition of UTI, one risks missing the etiology of a LTC resident's change in condition and thus causing a delay in the correct diagnosis. It is for these reasons that the American Geriatrics Society (AGS) and American Medical Directors Association (AMDA) promulgated statements about inappropriate testing and treatment for UTI in their Choosing Wisely Campaign lists.⁵⁻⁶

By using the clinical definition described in the article, it is not possible to infer any benefit from cranberry capsules in the prevention of UTI even among high risk individuals. Researchers evaluating interventions to reduce UTI should employ a more specific UTI definition, preferably using one of the published consensus criteria.⁷⁻⁸ Facilities faced with high rates of UTI, antibiotic resistant organisms and/or *C difficile* infections should implement antibiotic stewardship programs that include more specific minimum criteria for starting antibiotics, with protocols to closely monitor residents if antibiotics are withheld.^{4,9} Admittedly, more work is needed to establish the safety and efficacy of specific minimum criteria for initiating antibiotics for UTI in LTC settings, especially among those residents unable to report symptoms.¹⁰ The onslaught of antibiotic resistant organisms and *C. difficile* illness gives this work high priority. We must not handicap ourselves by calling any change in clinical status in LTC a UTI.

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