

## Asymptomatic Bacteriuria: Prevalence in the elderly population

### STUDY QUESTION

What is the prevalence of asymptomatic bacteriuria in various elderly populations? What risk factors and complications are associated with asymptomatic bacteriuria? Does treatment improve outcomes?

### STUDY DESIGN

**Design:** Literature review of articles focused on asymptomatic bacteriuria (ASB) in the elderly.

**Setting:** Articles were drawn from populations of older adults including community-dwelling, hospitalized, and long term care facility patients.

**Patients:** Adults 65 and over.

**Methods:** Studies were identified from MEDLINE and Pubmed from 1980 to 2009 using the search terms "asymptomatic bacteriuria" and "elderly" with the limits of "core clinical journals," English language, "human," "aged 65 and above," and "studies published from 1980 to 2009." Cochrane Library database was searched using the same terms. "Local Australian guidelines" were also searched. No specific methodology was used to determine inclusion/exclusion of studies identified by the searches. Once articles were identified, information pertaining to each outcome was abstracted.

### MAIN RESULTS

Sixty-eight articles, two Cochrane reviews, and one Australian guideline were identified. No overall or aggregate numbers were reported. Authors identified prevalence, etiology, risk factors, diagnosis,

complications, and management of asymptomatic bacteriuria from each article. ASB prevalence increases with age. In the community, it is present in up to 5% of men and 22% of women. Prevalence is greater in institutionalized and hospitalized patients where it is present in one-fourth to one-half of women and up to one third of men. Risk factors for ASB include several medical comorbidities, high post-void residual, chronic indwelling catheters, incontinence, reduced mobility, and estrogen treatment. National guidelines exist to guide diagnosis of ASB, but it can be difficult to determine if nonspecific patient symptoms are due to acute infection. Normal urine dipstick can rule out infection but has poor specificity of <50%. There is no association between ASB and morbidity/mortality. There is no proven benefit of routine screening for or treatment of ASB.

### CONCLUSION

Asymptomatic bacteriuria is common in older adults and is more likely to be present in those with multiple medical comorbidities or other risk factors. Routine screening for and treatment of asymptomatic bacteriuria is not recommended.

### ABSTRACTED FROM

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### COMMENTARY by Jeffrey M. Caterino, MD, MPH (The Ohio State University)

Asymptomatic bacteriuria in older adults may both confound diagnosis of UTI and lead to antibiotic overtreatment. The authors provide a literature review of the topic, but do not do so in a robust, structured manner. They did not vary search terms, for example using "geriatric" rather than "elderly." There is no mention of searching the references section of identified articles and the limitation to Core Clinical Journals could result in missed articles. It is not clear how articles were weighted or if any were excluded. In the absence of a structured process, care must be taken in manuscript interpretation.

Despite the methodologic issues, it is clear that a large proportion of older adults have ASB and that this must be accounted for when ED physicians are interpreting the results of urine testing, particularly dipsticks but also microscopic analysis and urine culture results. There is no benefit to routinely testing for or treating ASB.<sup>1</sup> IDSA guidelines also provide diagnostic criteria to differentiate ASB from acute, symptomatic UTI. However, applicability of these criteria in the acute care setting is unclear. For example, inpatients with bacteremic UTI (i.e. confirmed acute infection), often fail to meet these diagnostic criteria. Data is also lacking regarding presence of ASB in the ED population. Acute UTI is often diagnosed in older ED patients who lack classic UTI symptoms, but have symptoms such as altered mental status.<sup>2,3</sup> For the ED physician, the problem remains one of differentiating ASB from acute infection. ED physicians should use caution in attributing atypical symptoms to acute UTI when the patient may have ASB plus another ongoing process. ED physicians also should not treat positive urine test results in patients with absolutely no suspicion of UTI. In those patients with only atypical symptoms, they should use caution in attributing them to UTI, search for other causes of the symptoms, and use antibiotics judiciously.

#### Reference List

1. Nicolle LE, Bradley S, Colgan R, Rice JC, Schaeffer A, Hooton TM. Infectious Diseases Society of America guidelines for the diagnosis and treatment of asymptomatic bacteriuria in adults. *Clin Infect Dis* 2005; 40(5):643-654.
2. Ginde AA, Rhee SH, Katz ED. Predictors of outcome in geriatric patients with urinary tract infections. *J Emerg Med* 2004; 27(2):101-108.
3. Caterino JM, Ting SA, Sisbarro SG, Espinola JA, Camargo CA, Jr. Age, Nursing Home Residence, and Presentation of Urinary Tract Infection in U.S. Emergency Departments, 2001-2008. *Acad Emerg Med* 2012; 19(10):1173-1180.

