Supplementary Online Content

Petty LA, Vaughn VM, Flanders SA, et al. Risk factors and outcomes associated with treatment of asymptomatic bacteriuria in hospitalized patients. *JAMA Intern Med*. Published online August 26, 2019. doi:10.1001/jamainternmed.2019.2871

This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix. Outcome Adjustment Variables

Outcomes were adjusted for patient variables found to be significant ($p<0.05$) and associated with treatment in the bivariate and multivariate analysis and the following:

Mortality, readmissions, ED visits, and discharge to post-acute care facility were adjusted for age, Charlson Comorbidity Index, hospitalization in 90 days preceding current admission, admission from nursing home, and insurance type.[1-4]

Clostridioides difficile occurring within 30 days of discharge were adjusted for age, history of antibiotic use (and number of antibiotics) in previous 90 days, admitted from skilled nursing facility, prior hospitalization, proton-pump inhibitor use, immunosuppression, and Charlson Comorbidity Index.[5-7]

Hospital length of stay from date of urine testing were adjusted for age, gender, Charlson Comorbidity Index, prior hospitalization, admission from nursing home, and insurance type.[8,9]

eReferences.

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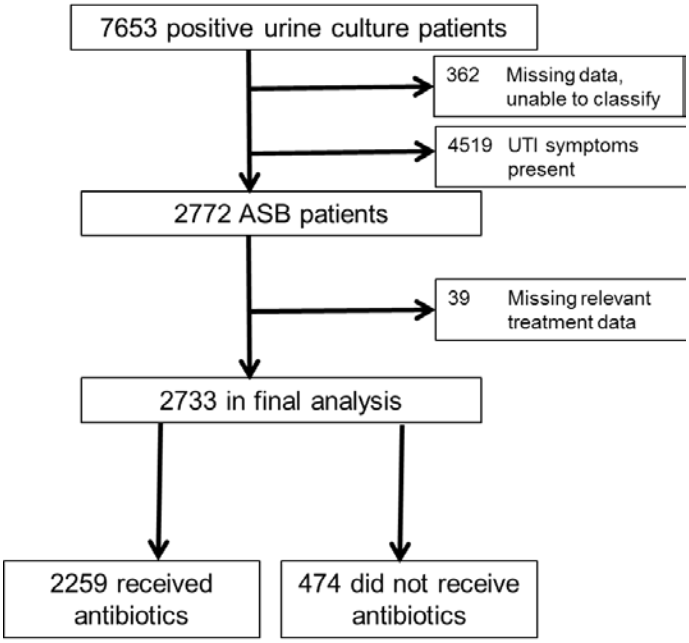
eFigure. Flow Diagram of Study Population



Signs and Symptoms Attributable to Urinary Tract Infection (*without alternative cause*):

1. Urgency, frequency, dysuria
2. Suprapubic pain or tenderness
3. Costovertebral pain or tenderness
4. New onset mental status changes with potential systemic signs of infection (leukocytosis (WBC >10 x 10^9/L), or hypotension (SBP < 90mmHg), or ≥2 SIRS criteria[1])
5. Fever (>38.0°C) or rigors
6. Acute hematuria
7. Increased spasticity or autonomic dysreflexia in a patient with a spinal cord injury

[15]SIRS, systemic inflammatory response syndrome [temperature <36°C (96.8°F) or > 38.0°C (100.4°F), heart rate >90 beats per minute, respiratory rate >20 breaths per minute, white blood cell count <4000/mm^3 or >12000/mm^3]

eTable 1. Top Ten Primary Admitting and Discharge Diagnoses Among Treated vs Not Treated Asymptomatic Bacteriuria Patients, N=2733

Top Admitting Diagnoses[a] for Treated ASB	N (%)	Top Admitting Diagnoses[a] for Untreated ASB	N (%)
Urinary tract infection	424 (18.8%)	Congestive heart failure	37 (7.8%)
Congestive heart failure	130 (5.8%)	Fluid and electrolyte disorders	28 (5.9%)
Syncope	95 (4.2%)	Cardiac dysrhythmias	21 (4.4%)
Missing or unknown	89 (3.9%)	Nonspecific chest pain	21 (4.4%)
Other nervous system disorders	78 (3.5%)	Gastrointestinal hemorrhage	21 (4.4%)
Cardiac dysrhythmias	76 (3.4%)	Syncope	19 (4.0%)
Acute and unspecified renal failure	76 (3.4%)	Missing or unknown	16 (3.4%)
Acute cerebrovascular disease	69 (3.1%)	Other nervous system disorders	15 (3.2%)
Malaise and fatigue	65 (2.9%)	Acute cerebrovascular disease	13 (2.7%)
Fluid and electrolyte disorders	62 (2.7%)	Abdominal pain	13 (2.7%)
Top Discharge Diagnoses[a] for Treated ASB	**N (%)**	**Top Discharge Diagnoses[a] for Untreated ASB**	**N (%)**
Urinary tract infection	485 (21.5%)	Congestive heart failure	35 (7.4%)
Missing or unknown	52 (6.7%)	Acute and unspecified renal failure	32 (6.8%)
Congestive heart failure	117 (5.2%)	Fluid and electrolyte disorders	31 (6.5%)
Acute and unspecified renal failure	93 (4.1%)	Cardiac dysrhythmias	26 (5.5%)
Other nervous system disorders	82 (3.6%)	Missing or unknown	17 (3.6%)
Cardiac dysrhythmias	73 (3.2%)	Other nervous system disorders	15 (3.2%)
Fluid and electrolyte disorders	73 (3.2%)	Gastrointestinal hemorrhage	15 (3.2%)
Acute cerebrovascular disease	62 (2.7%)	Acute cerebrovascular disease	13 (2.7%)
Septicemia	58 (2.6%)	Intestinal obstruction without hernia	12 (2.5%)
Gastrointestinal hemorrhage	57 (2.5%)	Deficiency and other anemia	12 (2.5%)

[a]Primary diagnoses

ASB, asymptomatic bacteriuria

eTable 2. Sensitivity Analyses for Duration of Hospital Stay after Urine Testing for Treatment vs No Treatment of Asymptomatic Bacteriuria, N=2733

Outcome	Antibiotics Median [IQR]	No Antibiotics Median [IQR]	Unadjusted RR (95% CI)	Unadjusted P-value	Adjusted RR (95% CI)	Adjusted P-value
Duration of hospitalization, only if urine testing sent on hospital day 1[a]	5 days [3, 6] N=1754	3 days [3, 5] N=314	1.35 (1.24, 1.48)	<.0001	1.33 (1.22, 1.46)	<.0001
Duration of hospitalization, only if urine testing sent on hospital day 1, antibiotics started on hospital day 1[a]	4 days [3, 6] N=1496	3 days [3, 5] N=314	1.31 (1.18, 1.45)	<.0001	1.27 (1.15, 1.40)	<.0001

Outcomes were adjusted for patient variables found to be significant ($p<0.05$) and associated with treatment in the bivariate and multivariate analysis and the following:

[a]From date of urine testing (either urine culture or urinalysis, whichever sent first). Adjusted for age, gender, Charlson Comorbidity Index, prior hospitalization, admission from nursing home, and insurance type

CI, confidence interval; RR, relative risk

