

POEMs

Patient-Oriented Evidence That Matters

No Benefit, Longer Hospital Stay with Treatment of Asymptomatic Bacteriuria

Clinical Question

What factors and outcomes are associated with inappropriate treatment of asymptomatic bacteriuria?

Bottom Line

Inappropriate treatment of asymptomatic bacteriuria is common in hospitalized patients. Older patients, those with dementia or acutely altered mental status, and those with abnormal urinalysis results are more likely to be treated with antibiotics. Treatment did not improve clinical outcomes and was associated with a longer hospital stay. (Level of Evidence = 2b)

Synopsis

Using data from the Michigan Hospital Medicine Safety Consortium, the investigators identified 2,733 hospitalized patients with asymptomatic bacteriuria, defined as a positive urine culture without signs or symptoms of a urinary tract infection (UTI), such as dysuria, urinary frequency or urgency, suprapubic pain, fever, costovertebral pain or tenderness, hematuria, and autonomic dysreflexia/spasticity in patients with spinal cord injury. Patients with altered mental status but no other signs or symptoms of UTI and no evidence of systemic infection were categorized as having

asymptomatic bacteriuria. The presence of UTI or asymptomatic bacteriuria was based on chart review and thus potentially flawed. (The quality of documentation may have varied.) The median age of the cohort was 77 years, almost 80% were women, and 83% were treated with antibiotics for a median of seven days. After multivariable analysis, factors associated with treatment of asymptomatic bacteriuria included older age, dementia, urinary incontinence, altered mental status, urine culture with *Escherichia coli*, leukocytosis, bacteriuria greater than 100,000 colony-forming units, and a positive urinalysis (defined as the presence of leukocyte esterase or nitrite, or more than five white blood cells per high-power field). When comparing patients with asymptomatic bacteriuria who received antibiotics and those who did not, there were no differences in 30-day mortality, readmissions, emergency department visits, discharge to post-acute care facility, or *Clostridioides difficile* infection. Those who received antibiotic treatment had a 37% increase in the length of hospital stay (four days vs. three days; relative risk = 1.37; 95% CI, 1.28 to 1.47).

Study design: Cohort (retrospective)

Funding source: Industry

Allocation: Uncertain

Setting: Inpatient (ward only)

Reference: Petty LA, Vaughn VM, Flanders SA, et al. Risk factors and outcomes associated with treatment of asymptomatic bacteriuria in hospitalized patients [published online August 26, 2019]. *JAMA Intern Med*. <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2748454>

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Increased Readmissions and Adverse Events with Intensification of Antihypertensive Regimen on Hospital Discharge

Clinical Question

Does the intensification of antihypertensive regimens at hospital discharge affect clinical outcomes?

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This series is coordinated by Sumi Sexton, MD, editor-in-chief.

A collection of POEMs published in *AFP* is available at <https://www.aafp.org/afp/poems>.

Bottom Line

The intensification of antihypertensive regimens on discharge in older adults hospitalized for noncardiac conditions is associated with an increased risk of readmission (number needed to harm [NNH] = 27) and medication-related serious adverse events (NNH = 63) within 30 days. There is no association with a decreased risk of cardiovascular events at one year. (Level of Evidence = 2b)

Synopsis

Using national data from the U.S. Department of Veterans Affairs (VA), the investigators identified adults 65 years or older with hypertension who were admitted within a two-year period to a VA hospital for the common noncardiac conditions of pneumonia, urinary tract infection, or venous thromboembolism. Patients with a secondary diagnosis of atrial fibrillation, acute coronary syndrome, or acute cerebrovascular event were excluded. Using dispensing data from the VA hospital pharmacies, intensifications of antihypertensive regimens were identified by newly prescribed antihypertensive medications on discharge, or an increased dose by more than 20% of a medication that had been prescribed before admission. Patients who received more than 20% of their outpatient care outside the VA, patients admitted from nursing homes, and those who had been hospitalized within the past 30 days were excluded. Out of an initial cohort of 14,915 patients, of which 97% were male, 2,074 (14%) had antihypertensive regimen intensifications at discharge. These patients were more likely to be black and more likely to have higher prehospitalization blood pressures, higher inpatient blood pressures, and heart failure. Using propensity score matching, the investigators then compared 2,028 patients who had antihypertensive regimen intensifications with 2,028 similar patients without such intensifications. Those with intensification were more likely to be readmitted within 30 days of discharge (21% vs. 18%; hazard ratio [HR] = 1.23; 95% CI, 1.07 to 1.42) and were more likely to have an emergency department visit or hospitalization for a medication-related serious adverse event within 30 days (4.5% vs. 3.1%; HR = 1.41; 95% CI, 1.06 to 1.88). There was no difference between the two groups in the rate of cardiovascular events (defined as a composite of emergency department visits and

hospitalizations for acute myocardial infarction, unstable angina, stroke, heart failure, or hypertension) at one year.

Study design: Cohort (retrospective)

Funding source: Government

Allocation: Uncertain

Setting: Inpatient (any location) with outpatient follow-up

Reference: Anderson TS, Jing B, Auerbach A, et al. *Clinical outcomes after intensifying antihypertensive medication regimens among older adults at hospital discharge [published online August 19, 2019]. JAMA Intern Med.* <https://jamanetwork.com/journals/jama/internalmedicine/fullarticle/2747871>

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Topical Interventions Improve Outcomes After Cryosurgery for Actinic Keratosis

Clinical Question

Do topical interventions improve outcomes in addition to cryosurgery for actinic keratoses compared with cryosurgery alone?

Bottom Line

Based on a review of low-quality evidence, adding a topical intervention after cryosurgery for actinic keratosis improves the likelihood of complete clearance from 46% to 79% (number needed to treat [NNT] = 3). In the absence of better evidence, fluorouracil and diclofenac may be preferable to ingenol (Picato) based on cost. (Level of Evidence = 1a-)

Synopsis

The authors of this well-conducted meta-analysis screened 1,758 studies and ultimately included only nine of them. Limitations include poor descriptions of the studies, with unclear accounts of randomization or allocation concealment, and failure to mask the participants in five trials and the outcome assessors in two trials. The topical interventions applied after cryosurgery for actinic keratosis included imiquimod (Aldara) in four studies, ingenol in two studies, diclofenac 3% in 2.5% hyaluronic acid in one study, fluorouracil 0.5% cream in one study, and photodynamic therapy with aminolevulinic acid in one study. The overall likelihood of complete lesion clearance when combining all nine studies was

greater with the addition of topical therapy (relative risk [RR] = 1.74; 95% CI, 1.25 to 2.43). Applied to a base rate of complete lesion clearance of 46% with cryosurgery alone, the addition of a topical intervention would increase the rate to 79%. A similar pattern was seen for partial clearance in three studies with 421 patients (RR = 1.64; 95% CI, 0.88 to 3.03). There was no difference in withdrawals, indicating good tolerability. There was substantial heterogeneity between studies ($I^2 = 73\%$). Individual studies of diclofenac, fluorouracil, and ingenol showed significant benefit consistent with the overall effect, whereas imiquimod and photodynamic therapy with aminolevulinic acid did not, but sample sizes for most studies were small.

Study design: Meta-analysis (randomized controlled trials)

Funding source: Foundation

Setting: Various (meta-analysis)

Reference: *Heppt MV, Steeb T, Ruzicka T, et al. Cryosurgery combined with topical interventions for actinic keratosis: a systematic review and meta-analysis. Br J Dermatol. 2019;180(4):740-748.*

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Do Not Change Antidepressant Treatment Early Based on Lack of Response

Clinical Question

Does a lack of early symptom improvement in patients treated for depression predict treatment failure?

Bottom Line

Do not be in a hurry to change treatment in patients with severe depression who do not respond to treatment within the first two weeks. Early response to treatment predicts eventual

response or remission, but a lack of early response does not predict treatment failure. Approximately one-third of patients who do not show an early response will respond by six weeks. No individual symptom response predicts eventual improvement. (Level of Evidence = 1a)

Synopsis

The researchers used individual patient data derived from 30 studies of the treatment of severe major depressive disorder with a second-generation antidepressant. They had data on 2,184 patients who received a placebo and 6,058 who received an antidepressant. By six weeks of treatment, approximately 50% of treated patients had responded, with 32% achieving remission of symptoms. By 12 weeks, the rate was up to approximately 68% response with 49% achieving remission. Patients with early improvement—by two weeks—were likely to respond by six weeks, but almost 33% of patients without early improvement responded by six weeks, and 43% responded by 12 weeks. No individual symptom response predicted eventual response or remission.

Study design: Meta-analysis (randomized controlled trials)

Funding source: Unknown/not stated

Setting: Various (meta-analysis)

Reference: *de Vries YA, Roest AM, Bos EH, et al. Predicting antidepressant response by monitoring early improvement of individual symptoms of depression: individual patient data meta-analysis. Br J Psychiatry. 2019;214(1):4-10.*

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