

POEMs

Delayed Antibiotic Prescription for New-Onset Cough Associated with Decreased Reconsultation

Clinical Question

In adults with lower respiratory tract infection, what is the effect of different antibiotic prescribing strategies?

Bottom Line

Delayed antibiotic treatment (that is, giving a prescription with a suggestion to fill it only if symptoms are still present after three days) was associated with decreased revisits by adults with new-onset cough deemed to be infective. Neither immediate nor delayed antibiotic treatment altered hospitalization rates, but this lack of difference might be because of appropriately selective prescribing of antibiotics to more at-risk patients. In this study, one in four patients was not prescribed antibiotic treatment and fared as well as the patients who received a prescription. (Level of Evidence = 2b)

Synopsis

This study included adult patients seen in U.K. primary care offices who had acute cough for three weeks or less that was judged by their physician to be due to infection. Follow-up included 99.6% of patients. Of the 28,779 patients not immediately referred for hospitalization or radiographic investigation, 25.5% were not treated with an antibiotic, 61.3% received a prescription for an antibiotic, and 13.3% received a prescription for a delayed antibiotic (average advised delay was three days). This was not a randomized study and physicians were selective in their use of antibiotics, prescribing immediate antibiotics for patients who were older; had

major comorbidities; reported more shortness of breath, fever, or purulent sputum; or had low oxygen saturation, more severe cough, and crackles or wheeze. Subsequently, hospitalization or death occurred in 0.3% after no antibiotic, 0.9% after immediate antibiotic treatment, and 0.4% after a delayed antibiotic (no statistically significant difference). Follow-up visits were common in all groups but were significantly reduced by delayed antibiotic treatment (14.1% with a delayed antibiotic vs. 19.7% with no antibiotic and 25.3% with an immediate antibiotic).

Study design: Cohort (prospective)

Funding source: Government

Setting: Outpatient (primary care)

Reference: Little P, Stuart B, Smith S, et al. Antibiotic prescription strategies and adverse outcome for uncomplicated lower respiratory tract infections: prospective cough complication cohort (3C) study. *BMJ*. 2017;357:j2148.

Allen F. Shaughnessy, PharmD, MMedEd

Professor of Family Medicine
Tufts University
Boston, Mass.

Long-term Use of Bisphosphonates Increases the Risk of Fractures in Older Women

Clinical Question

Does long-term use of bisphosphonates increase the risk of fractures in older women?

Bottom Line

In this cohort study, older women at a high risk of fractures who used oral bisphosphonates for 10 to 13 years had a higher risk of fractures than women who used bisphosphonates for only two years. (Level of Evidence = 2b)

POEMs (patient-oriented evidence that matters) are provided by Essential Evidence Plus, a point-of-care clinical decision support system published by Wiley-Blackwell. For more information, see <http://www.essentialevidenceplus.com>. Copyright Wiley-Blackwell. Used with permission.

For definitions of levels of evidence used in POEMs, see http://www.essentialevidenceplus.com/product/ebm_loe.cfm?show=oxford.

To subscribe to a free podcast of these and other POEMs that appear in *AFP*, search in iTunes for "POEM of the Week" or go to <http://goo.gl/3niWXb>.

This series is coordinated by Sumi Sexton, MD, Associate Deputy Editor.

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

Synopsis

The Women's Health Initiative had two components: a randomized trial that busted a bunch of myths about hormone therapy and an observational study with nearly 100,000 women that serves as the basis for this study. These authors pulled a subset of women who had taken an oral bisphosphonate for at least two years, had follow-up data, and who had a FRAX score placing their five-year fracture risk at 1.5% or higher. Additionally, the authors excluded women who took medications that affect bone metabolism (e.g., calcitonin, parathyroid hormone, aromatase inhibitors). Ultimately, they included 5,120 women. They then compared the rate of clinical fractures in women who had taken oral bisphosphonates for only two years with the rate of those who had taken them for three to five years, six to nine years, and 10 to 13 years. It would have been helpful if they had included a group of women with no bisphosphonate exposure.

The women were, on average, 80 years of age. The women had an average of four years of follow-up data and reported 127 hip fractures, 159 wrist or forearm fractures, 235 clinical vertebral fractures, and a total of 1,313 clinical fractures (presumably hip plus wrist plus forearm plus clinical vertebral plus all other fractures). After taking into account other factors that might influence the rate of fractures, 10 to 13 years of bisphosphonate use was associated with a higher risk of any clinical fracture (but not at any single specific site) than two years of use (hazard ratio = 1.29; 95% confidence interval, 1.07 to 1.57). There was no significant association between intermediate-term use of bisphosphonates and fracture risk. When the authors looked only at women with a fracture after 54 years of age, the relationship between long-term bisphosphonate use and subsequent fracture remained.

Study design: Cohort (prospective)

Funding source: Government

Setting: Population-based

Reference: *Drieling RL, LaCroix AZ, Beresford SAA, et al. Long-term oral bisphosphonate therapy and fractures in older women: The Women's Health Initiative. J Am Geriatr Soc. 2017;65(9):1924-1931.*

Henry C. Barry, MD, MS

Professor
Michigan State University
East Lansing, Mich.

Intensive Blood Pressure Control in Older Patients Can Decrease Renal Function

Clinical Question

Does intensive systolic blood pressure lowering in older patients increase the likelihood of renal dysfunction?

Bottom Line

In this post-hoc analysis of the previously published SPRINT trial, lowering the systolic blood pressure of patients who are at increased risk of cardiovascular events (average age = 66 years) will decrease their risk of cardiovascular disease but increase their likelihood of developing moderate renal dysfunction. It will not, at least over three years, increase their likelihood of developing end-stage renal disease. (Level of Evidence = 1b)

Synopsis

This report is a subgroup analysis of the SPRINT (Systolic Blood Pressure Intervention Trial), which enrolled patients with high blood pressure and elevated cardiovascular risk. This analysis was limited to the 6,662 participants, with a mean age of 66 years, who had a baseline estimated glomerular filtration rate of at least 60 mL per minute per 1.73 m² and who represented approximately 70% of the total original cohort. The participants were randomly assigned, allocation concealment unknown, to be treated to reach an intensive (120 mm Hg or lower) or standard (140 mm Hg or lower) systolic blood pressure. The actual blood pressure difference between the two groups was an average of 15 mm Hg. Significantly more patients in the lower blood pressure group experienced a significant decline in kidney function, defined as a 30% or greater decline in glomerular filtration rate to less than 60 mL per minute per 1.73 m² (number needed to treat to harm = 38; 95% confidence interval, 29 to 53). But, as in the full SPRINT report, the risk of death or cardiovascular event over three years was lower with lower systolic blood pressure. None of the participants developed end-stage renal disease. Post-hoc analyses such as this one are risky to interpret, but in this case, the results echo the analysis in the original report.

Study design: Randomized controlled trial (nonblinded)

Funding source: Government

Allocation: Uncertain

Setting: Outpatient (any)

Reference: *Beddhu S, Rocco MV, Toto R, et al.; SPRINT Research Group. Effects of intensive systolic blood pressure control on kidney and cardiovascular outcomes in persons without kidney disease: a secondary analysis of a randomized trial. Ann Intern Med. 2017;167(6):375-383.*

Allen F. Shaughnessy, PharmD, MMedEd

Professor of Family Medicine
Tufts University
Boston, Mass.

Oral Steroids Not Helpful for Acute Lower Respiratory Tract Infection in Nonasthmatic Adults

Clinical Question

Are steroids useful in the treatment of acute lower respiratory tract infection (LRTI) in adults without asthma?

Bottom Line

This study found no clinically significant benefit of steroids for the treatment of acute LRTI in adults without asthma, including those presenting with wheezing or shortness of breath. (Level of Evidence = 1b)

Synopsis

Because symptoms of acute LRTI can mimic exacerbated asthma, steroids are commonly prescribed with or without antibiotics. These investigators enrolled adults, 18 years or older, presenting with an acute cough (lasting 28 days or less) as the main symptom and at least one other lower respiratory tract symptom (e.g., phlegm, chest pain, wheezing, shortness of breath). Exclusion criteria included evidence of

chronic pulmonary disease, having received any asthma medication in the previous five years, or requiring same-day hospitalization or urgent antibiotic treatment. Patients (N = 401) randomly received (concealed allocation assignment) 40 mg of prednisolone daily for five days or matched placebo. Those patients also receiving a nonurgent antibiotic prescription were asked to delay filling the prescription for at least 48 hours. Patients assessed outcomes using symptom diaries and remained masked to their treatment group assignment. Symptoms were measured daily, including twice-daily peak expiratory flow, for 28 days or until symptom resolution. Complete follow-up occurred for 94% of patients at 28 days.

Using intention-treat analysis, no clinically significant group differences occurred in the median duration of cough or severity of symptoms, symptom duration, antibiotic use, peak flow, or patient satisfaction. There were also no significant subgroup effect differences (i.e., smoking, wheezing, chest pain, shortness of breath).

Study design: Randomized controlled trial (double-blinded)

Funding source: Government

Allocation: Concealed

Setting: Outpatient (primary care)

Reference: *Hay AD, Little P, Harnden A, et al. Effect of oral prednisolone on symptom duration and severity in nonasthmatic adults with acute lower respiratory tract infection: a randomized clinical trial. JAMA. 2017;318(8):721-730.*

David Slawson, MD

Director of Information Sciences
University of Virginia Health System
Charlottesville, Va. ■