POEMs

Patient-Oriented Evidence That Matters

Comparable Outcomes With Five and 10 Days of Antibiotics in Children With CAP

Clinical Question

Are children with community-acquired pneumonia (CAP) better off with five days or 10 days of antibiotics?

Bottom Line

Children who clinically improve after five days of antibiotics for CAP do well whether they stop treatment or receive an additional five days of therapy. (Level of Evidence = 1b)

Synopsis

The study took place in multiple settings: outpatient clinics, urgent care centers, and emergency departments. The researchers enrolled children six to 71 months of age with clinically diagnosed uncomplicated CAP. When enrolled, the children had already been treated with three to five days of amoxicillin, amoxicillin/clavulanate, or cefdinir (Omnicef), independent of study protocol. The children were doing well at the time of enrollment (i.e., afebrile, not tachypneic, and no severe cough). After completion of five days of initial therapy, the children were then randomized to receive five days of placebo (n = 189) or an additional five days of the original antibiotic (n = 191). The researchers evaluated the children serially until 25 days after enrollment using a composite scale (based on clinical response, resolution of symptoms, and adverse effects) that they adjusted for duration of antibiotics. There were no significant differences in any of the individual components of the composite. However, the authors report that when adjusted for duration, five days of antibiotics was associated with a greater probability of a desirable outcome (0.69; 95% CI, 0.63 to 0.75) than 10 days of therapy. A subset of 171 children agreed to have throat swabs 19 to 25 days after enrollment to test for antibiotic resistant genes; the number of these was significantly lower in the children treated for five days. The authors did not report actual bacterial resistance.

Study design: Randomized controlled trial (double-blinded)

Funding source: Government

Allocation: Concealed

Setting: Outpatient (any)

Reference: *Williams DJ, Creech CB, Walter EB, et al.; The DMID 14-0079 Study Team. Short- vs standard-course outpatient antibiotic therapy for community-acquired pneumonia in children: the SCOUT-CAP randomized clinical trial.* JAMA Pediatr. *2022; 176(3):253-261.*

Henry C. Barry, MD, MS
Professor
Michigan State University
East Lansing, Mich.

Surgery Is No Better Than Nonoperative Treatment for Achilles Tendon Rupture in Adults

Clinical Question

Is open repair or minimally invasive surgery better than nonoperative management for adults with acute Achilles tendon rupture?

Bottom Line

There is no clear benefit to surgery over nonoperative management for adults with acute Achilles tendon rupture. Symptomatic improvement is the same, and surgery trades more nerve injuries for a lower risk of re-rupture. (Level of Evidence = 1b)

Synopsis

The Achilles heel of orthopedic surgery appears to be that when surgeons compare surgical to nonoperative management, they find that nonoperative management is effective for many, if not all, patients. In this Norwegian study, adults 18 to 60 years of age with an acute Achilles tendon rupture were randomized to receive open surgical repair, minimally invasive repair, or nonoperative management. The injury had to be assessed and casted within three days of injury, and surgery had to be completed within seven days of injury. Nonoperative management involved a below-the-knee equinus cast for two weeks, followed by six weeks of weight-bearing as tolerated with heel wedges and ankle-foot orthoses. Patients had gradually decreasing plantar flexion with progressive removal of heel lifts in the six weeks

following the equinus cast. The brace was worn day and night for the first two weeks but was removed at night for weeks 3 through 6. Postoperative management was similar.

Groups were similar at baseline, with a mean age of 40 years and a body mass index of approximately 27 kg per m^2. About 75% of the patients were men. Analysis was by intention to treat, and allocation was appropriately concealed, although the study was not masked to the intervention. At one year, there was no difference in the primary outcome of a change in the Achilles tendon Total Rupture Score compared with baseline status pre-injury: –17 points for nonoperative management, –16 points for open repair, and –14.7 points for minimally invasive surgery. In this case, smaller negative numbers are better, but the minimum clinically important difference is estimated to be 8 to 10 points. There was no difference in the broader 36-item Short Form Health Survey quality of life scale. Nerve injuries were less common with nonoperative management (0.6% vs. 2.8% with open repair and 5.2% with minimally invasive surgery). Re-ruptures were more common with nonoperative management (6.2% vs. 0.6% in each of the surgery groups; number needed to harm = 18), with most occurring in the 10 weeks following the index injury.

Study design: Randomized controlled trial (nonblinded)

Funding source: Government

Allocation: Concealed

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

Reference: *Myhrvold SB, Brouwer EF, Andresen TKM, et al. Nonoperative or surgical treatment of acute Achilles' tendon rupture.* N Engl J Med. *2022;386(15):1409-1420.*

Mark H. Ebell, MD, MS
Professor
University of Georgia
Athens, Ga.

Influenza Vaccine Shortly After Myocardial Infarction Reduces One-Year Mortality

Clinical Question

Does an influenza vaccine given shortly after acute myocardial infarction (MI) reduce the likelihood of death or cardiovascular events in the following year?

Bottom Line

The researchers found a clinically and statistically significant reduction in all-cause mortality for patients given an influenza vaccine immediately following an MI (number needed to treat [NNT] = 50). The results are consistent with those of several other studies and a meta-analysis of four randomized controlled trials and 12 observational studies. (Level of Evidence = 1b)

Synopsis

The study identified 2,571 adults in eight countries who were hospitalized with acute MI and had not received the influenza vaccine in the past 12 months. The patients were randomized to receive the influenza vaccine or placebo within 72 hours of admission or angiography. Participants were enrolled during the flu season (September through February in the northern hemisphere). The study was terminated before achieving the target enrollment of 4,372 patients because of the COVID-19 pandemic.

The primary outcome of death, MI, or stent thrombosis was based on a telephone interview 12 months after randomization. That is a potential limitation, although the authors performed a masked adjudication of any of these events after reviewing medical records. Groups were similar at baseline with a mean age of 60 years, 81% were men, and 54% had ST-elevation MI. There were more patients with two-vessel disease in the vaccine group (25.2% vs. 21.7%) and correspondingly fewer with one-vessel disease. The composite of all-cause mortality, stent thrombosis, and recurrent MI was less frequent in the vaccine group (5.0% vs. 7.2%; hazard ratio = 0.72; 95% CI, 0.52 to 0.99; NNT = 45). Most of this difference was due to significantly lower rates of all-cause mortality (2.9% vs. 4.9%; NNT = 50) and cardiovascular mortality (2.7% vs. 4.5%; NNT = 56). There was no significant difference between the vaccine and placebo groups with regard to MI (2.0% vs. 2.4%) or stent thrombosis (0.5% vs. 0.2%). There were some subgroup differences, with greater benefit seen for nonsmokers, those without a previous MI, and with non–ST-elevation MI. There was a large benefit for the 2017-2018 and 2019-2020 influenza seasons, but not for the 2016-2017 and 2018-2019 seasons. This was likely because the match between the vaccine and the circulating influenza strains was better in those two seasons. Harms were limited to mild injection site reactions. Industry support and participation were limited to provision

of the influenza vaccine. Adverse effects were rare and similar between groups. Approximately one in seven patients in both groups reported seeking an influenza vaccine outside of the trial.

Study design: Randomized controlled trial (double-blinded)

Funding source: Industry and foundation

Allocation: Concealed

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

Reference: *Fröbert O, Götberg M, Erlinge D, et al. Influenza vaccination after myocardial infarction: a randomized, double-blind, placebo-controlled, multicenter trial.* Circulation. *2021;144(18):1476-1484.*

Mark H. Ebell, MD, MS
Professor
University of Georgia
Athens, Ga.

Ketamine Reduces Suicidal Ideation Quickly, but May Not Reduce the Short-term Likelihood of Suicide Attempts

Clinical Question

In patients at risk of suicide who are admitted to a hospital, does ketamine (Ketalar) reduce suicidal ideation?

Bottom Line

Ketamine can rapidly reduce suicidal ideation and, presumably, the risk of suicide in at-risk patients voluntarily admitted to a hospital. However, based on this small study, ketamine does not seem to reduce the subsequent risk of attempted suicide over the next six weeks. (Level of Evidence = 1b–)

Synopsis

The researchers from seven hospitals in France enrolled 156 adults who were voluntarily admitted to a hospital for suicidal ideation with a score of more than 3 on the Beck scale for suicidal ideation. The patients, who did not have a history of substance use or psychotic disorders, were randomly assigned using concealed allocation to receive two 40-minute ketamine infusions, 0.5 mg per kg, or saline placebo infusions, given 24 hours apart. Using intention-to-treat analysis, remission of suicidal ideation at three days (one day after the treatment) occurred more frequently in patients who received ketamine: 63% vs. 31.6%; number needed to treat = 3.2; 95% CI, 2.2 to 6.6. The onset of remission was fast, within 40 minutes of the first dose. The benefit was greater in those with bipolar disorder (84.6% vs. 28.0%; $P < .001$) than in those with major depression (42.3% vs. 35.7%; $P = .6$). Over the six weeks following admission, a similar number of patients attempted suicide in both groups (eight in the ketamine group and six in the placebo group).

Study design: Randomized controlled trial (double-blinded)

Funding source: Government

Allocation: Concealed

Setting: Inpatient (ward only)

Reference: *Abbar M, Demattei C, El-Hage W, et al. Ketamine for the acute treatment of severe suicidal ideation: double blind, randomised placebo controlled trial.* BMJ. *2022;376:e067194.*

Allen F. Shaughnessy, PharmD, MMedEd
Professor of Family Medicine
Tufts University
Boston, Mass.

Editor's Note: Dr. Ebell is deputy editor for evidence-based medicine for *AFP* and cofounder and editor-in-chief of Essential Evidence Plus, published by Wiley-Blackwell. Dr. Shaughnessy is an assistant medical editor for *AFP*. ■