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

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Focused Extracorporeal Shock Wave Therapy Better Than Placebo to Relieve Pain in Patients with Chronic Plantar Fasciitis

Clinical Question

Is focused extracorporeal shock wave therapy effective in relieving pain in patients with chronic plantar fasciitis?

Bottom Line

In this study, unlike others, patients with chronic plantar fasciitis treated with extracorporeal shock wave therapy had greater pain relief than those treated with placebo. (Level of Evidence = 1b)

Synopsis

The outcomes of treating plantar fasciitis with extracorporeal shock wave therapy have been mixed, and the overall improvement has not been believed to be clinically important. These researchers, most of whom had ties to the manufacturer of the ultrasound equipment used in this study, were convinced that their approach would be better, so they randomized 250 patients with at least six months of heel pain to receive three once-weekly treatments of focused extracorporeal shock wave therapy or placebo therapy. The patients had to have already failed at least two pharmacologic treatments and at least two non-pharmacologic treatments, and had to rate their pain as at least a 5 on a 10-point visual

analog scale. Patients used the scale to assess three different pain dimensions: taking their first steps in the morning, heel pain while doing daily activities, and heel pain while applying a standardized local pressure. The authors defined treatment success as a 60% reduction in two of these three dimensions. After 12 weeks, they had data on more than 98% of the patients. At the end of the study, the median reduction in pain was 69% in the extracorporeal shock wave therapy group and 34.5% in the placebo group. Slightly more than one-half the patients treated with extracorporeal shock wave therapy had at least a 60% reduction in pain compared with just more than one-third of those treated with placebo (number needed to treat = 6). However, the use of concomitant analgesic medication was similar in each group.

Study design: Randomized controlled trial (double-blinded)

Funding source: Industry

Allocation: Concealed

Setting: Outpatient (specialty)

Reference: Gollwitzer H, Saxena A, DiDomenico LA, et al. Clinically relevant effectiveness of focused extracorporeal shock wave therapy in the treatment of chronic plantar fasciitis: a randomized, controlled multicenter study. *J Bone Joint Surg Am.* 2015;97(9):701-708.

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Physician Assessment of COPD Does Not Match Spirometry Results

Clinical Question

How accurate are physician assessments of the severity of chronic obstructive pulmonary disease (COPD)?

Bottom Line

Using immediate, in-office spirometry results as the reference standard, seasoned ►

physicians accurately identified COPD severity in approximately one in three patients, underestimating severity in 41% of patients and overestimating severity in 29% of patients. This mismatch seems to be important because the physicians participating in this study changed their treatment plans for 37% of patients after reviewing the spirometry results. A second issue in this study: Although most of the physicians in the study had a spirometer in their office, they (or their staff) were unable to get usable spirometry results in 25% of their patients. (Level of Evidence = 1c)

Synopsis

The study included 899 patients with COPD who were randomly selected from the practices of 83 primary care physicians (63% family physicians and 37% general internists). The physicians had been in practice an average of 22 years and most had in-office spirometry available before this study. At one visit, both the physician and the patient rated the patient's pulmonary disease severity at that time on a five-point scale, ranging from 1 (no clinical symptoms or disease impact/mild symptoms) to 5 (very severe). Following this assessment, the patient immediately underwent in-office spirometry, although only 75% were able to produce at least one high-quality result. Overall, there was poor correlation among physician assessment, patient assessment, and spirometry results. Physicians underestimated severity in 41% of patients and overestimated severity in 29% of patients, using the spirometry results as the reference standard. Correlation was not much better with the patients' own estimates, with physicians underestimating severity in 42% of patients and overestimating severity in 18% compared with patients' self-assessments. Overall, physician ratings were accurate for only 30% of patients. More importantly, the physicians in this study recommended treatment changes for 37% of patients after reviewing spirometry results.

Study design: Cross-sectional

Funding source: Industry

Setting: Outpatient (primary care)

Reference: *Mapel DW, Dalal AA, Johnson P, Becker L, Hunter AG. A clinical study of COPD*

severity assessment by primary care physicians and their patients compared with spirometry. Am J Med. 2015;128(6):629-637.

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High-Risk Subgroups Have Little, if Any, Net Benefit from Antibiotics for Acute LRTI

Clinical Question

Are there subgroups of patients with acute lower respiratory tract infection (LRTI) who do not have clinically suspected pneumonia but who may benefit from antibiotics?

Bottom Line

Patients with acute LRTI and green sputum or cardiopulmonary comorbidities experience a slightly greater benefit with amoxicillin treatment. That outcome must be balanced against the harms of antibiotics on the individual and population level. (Level of Evidence = 1b-)

Synopsis

This is a secondary analysis of data from a large European randomized trial of the treatment of acute LRTI. These researchers recruited 2,061 adults with acute LRTI but no suspected pneumonia. The patients were randomized to receive 1 g of amoxicillin three times daily for seven days or matching placebo. Although U.S. physicians may criticize the choice of antibiotic, the prevalence of mycoplasma was extremely low in this cohort (0.2%), and there is good susceptibility of common respiratory pathogens to amoxicillin in Europe and the United Kingdom where this study took place. The current study identified subgroups of patients traditionally thought to be at increased risk of bacterial infection, namely those with lung disease, abnormal lung findings, a longer duration of illness, smokers, and those with fever or green sputum. For each subgroup, the authors looked at the effect of amoxicillin on symptom duration, severity, and new or worsening symptoms.

The overall results of the trial found a number needed to treat to prevent new or ►

worsening symptoms of approximately 30, similar to the number needed to treat to harm for adverse events related to antibiotic use. Overall, the authors found minimal differences in outcomes for the identified high-risk subgroups. There was a somewhat greater reduction in duration of symptoms for patients with green sputum (approximately two days), and a greater reduction in symptom severity between days 2 and 4 for those with significant cardiopulmonary morbidities (approximately three more patients out of 10 who rated symptoms as mild rather than moderate). None of the subgroups saw a greater benefit in preventing a worsening of illness.

Study design: Randomized controlled trial (double-blinded)

Funding source: Government

Allocation: Concealed

Setting: Outpatient (primary care)

Reference: Moore M, Stuart B, Coenen S, et al.; GRACE consortium. Amoxicillin for acute lower respiratory tract infection in primary care: subgroup analysis of potential high-risk groups [published correction appears in Br J Gen Pract. 2014;64(620):126]. Br J Gen Pract. 2014;64(619):e75-e80.

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Acetaminophen (Paracetamol) Minimally Effective for Back Pain and Osteoarthritis

Clinical Question

Is acetaminophen (paracetamol) effective for the treatment of low back pain or osteoarthritis?

Bottom Line

Although acetaminophen was hoped to be a safer alternative to nonsteroidal anti-inflammatory drugs and opioids for the treatment of common musculoskeletal

problems, on average it provides only minimal pain relief and improvement in function for patients with low back pain or osteoarthritis. Some persons may benefit with full dosages of acetaminophen but most will not. (Level of Evidence = 1a)

Synopsis

To identify all randomized controlled trials, the authors searched nine databases, including the Cochrane Registry. Two investigators independently selected articles for inclusion and extracted the data. Two investigators evaluated the quality of the 13 research studies, most of which were of good quality. Most of the studies used full dosages of acetaminophen (3,900 to 4,000 mg daily). There was no evidence of publication bias. For patients with low back pain, high-quality research in more than 1,000 patients found a lack of effectiveness on pain and disability in either the immediate (less than two weeks) or short-term (two weeks to three months) follow-up periods. For hip or knee osteoarthritis, acetaminophen produced a statistically significant but clinically unimportant effect on pain and disability over the immediate or short term. The research results were homogeneous except for immediate-term disability. Adverse effects were minimal. Patients receiving acetaminophen were more likely to have higher liver-function test results (greater than 1.5 times normal) than patients receiving placebo.

Study design: Meta-analysis (randomized controlled trials)

Funding source: Self-funded or unfunded

Setting: Various (meta-analysis)

Reference: Machado GC, Maher CG, Ferreira PH, et al. Efficacy and safety of paracetamol for spinal pain and osteoarthritis: systematic review and meta-analysis of randomised placebo controlled trials. BMJ. 2015;350:h1225.

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