POEMs

Patient-Oriented Evidence That Matters

Musculoskeletal Surgery for Nontraumatic Pain: Not a Great Analgesic

Clinical Question

Do common musculoskeletal surgical procedures produce better pain relief than no surgery?

Bottom Line

Musculoskeletal surgery is invaluable for unintentional injury. But for conditions associated with chronic pain (e.g., knee, shoulder, wrist, neck, back pain), even patients with objective changes on imaging that need intervention will not have better long-term pain relief with surgery compared with no surgery. Most of the studies were not masked, and there should have been a placebo effect to bolster a difference in pain relief between surgery and no surgery. Some people will benefit from surgery, but on average patients will not be better off. (Level of Evidence = 1a–)

Synopsis

The researchers identified the 14 most common musculoskeletal procedures performed across Australia, including procedures for leg pain associated with spinal stenosis, and hip, knee, back, shoulder, and wrist pain. They identified randomized controlled trials (RCTs) published in any language using the Cochrane CENTRAL database and reference lists of identified systematic reviews. Two researchers independently selected studies. They did not try to combine the study results, but evaluated whether surgery provided a clinically important difference in pain relief, as defined by the authors or using the published definition. Only 1% of all RCTs (n = 64) compared a procedure with no procedure and 81% of these did not mask the patient, opening them up to a placebo effect. Shoulder procedures either had no RCTs comparing them with no treatment (excision of outer end of clavicle, total shoulder replacement) or most studies not showing benefit (three of four for rotator cuff repair, and 14 of 15 for subacromial decompression). Six of eight studies failed to show a benefit on pain for carpal tunnel decompression. Most studies of spine fusion, with or without decompression for lumbar or neck pain, failed to show a benefit. No studies of laminectomy produced a benefit. The single study of total knee replacement found a benefit, but none of the 11 meniscectomy studies found a benefit, and only two of the eight debridement studies showed a benefit. Hip surgeries have not been compared with no therapy, and the single study of ankle arthroscopy failed to show a benefit.

Study design: Systematic review

Funding source: Self-funded or unfunded

Setting: Not applicable

Reference: *Harris IA, Sidhu V, Mittal R, et al. Surgery for chronic musculoskeletal pain: the question of evidence.* Pain. *2020; 161(suppl 1):*S95-S103.

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Three Strategies Are Effective in Managing Patients with Medication Overuse Headaches

Clinical Question

What are the effective approaches to managing patients with medication overuse headaches?

Bottom Line

In this study, achieving cure from medication overuse headaches after six months was likely regardless of strategy: detoxification (discontinuation of analgesic) plus pharmacologic prophylaxis, pharmacologic prophylaxis without withdrawal, or detoxification with pharmacologic preventive therapy delayed for two months. Although the authors favor the combined strategy, it seems like this is a good time for shared decision-making. (Level of Evidence = 2b–)

Synopsis

This study was fundamentally aimed at determining if detoxification is needed in patients with medication overuse headaches by comparing three outpatient strategies: detoxification plus pharmacologic prophylaxis, pharmacologic prophylaxis without withdrawal, and detoxification with pharmacologic preventive therapy delayed for two

months. The pharmacologic prophylactic therapy was at the discretion of the treating physician, and monoclonal antibody therapy was not available. The following prophylactic agents were ultimately used: metoprolol, lisinopril, candesartan (Atacand), topiramate (Topamax), amitriptyline, mirtazapine (Remeron), and onabotulinumtoxinA (Botox). All patients had access to rescue antiemetic therapy during withdrawal. Forty patients with medication overuse headaches were randomized to receive each strategy (N = 120); after six months, between 10% and 22.5% dropped out of each arm (overall drop-out rate was 15%). More than a 20% drop-out rate is worrisome. Although the presentation of their data is confusing, the authors report that medication overuse headaches were cured in 97% of those completing the detoxification plus pharmacologic prophylaxis strategy compared with 74% of those completing the pharmacologic preventive strategy and 89% of those completing the detoxification strategy. They also observed no significant differences in the number of headache days, in the subsequent use of short-term analgesics, or in headache severity. Each strategy appeared to be highly effective, but the unmasked design, loose medication management, and spotty drop-out rates raise some concerns about the data. The authors plan additional follow-up at 12 months and at four years.

Study design: Randomized controlled trial (nonblinded)

Funding source: Unknown/not stated

Allocation: Concealed

Setting: Outpatient (specialty)

Reference: *Carlsen LN, Munksgaard SB, Nielsen M, et al. Comparison of 3 treatment strategies for medication overuse headache: a randomized clinical trial.* JAMA Neurol. *2020;77(9):* 1069-1078.

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In High-Risk Older Patients with Atrial Fibrillation, Rhythm Control Reduces Cardiovascular Death and Stroke, But at a Price

Clinical Question

For older patients at high cardiovascular risk, is a strategy of rate control or rhythm control preferred for recent-onset atrial fibrillation (AF)?

Bottom Line

In high-risk older patients with recent-onset AF, a strategy of rhythm control results in fewer cardiovascular deaths (number needed to treat [NNT] = 333 per year) and fewer strokes (NNT = 333 per year). However, there are more adverse events and complications and a small decrease in health-related quality of life. This is a decision that should be individualized, and these findings should not be extrapolated to younger and lower-risk populations without further evidence. (Level of Evidence = 1b)

Synopsis

Previous studies that compared rate control and rhythm control had mixed results. In this study, 2,789 older adults with an onset of AF within the past year were recruited. Participants had to be older than 75 years, have had a recent transient ischemic attack (TIA) or stroke, or have at least two of the following: older than 65 years, female sex, heart failure or left ventricular hypertrophy, hypertension, diabetes mellitus, chronic kidney disease, or severe coronary disease. At baseline, the mean age of participants was 70 years, 46% were women, 12% had a previous TIA or stroke, 12% had chronic kidney disease, 28% had heart failure, 88% had hypertension, and 44% had valvular heart disease. The groups were balanced at baseline, and analysis was by modified intention to treat of all patients who had at least one follow-up assessment. This was a very high-risk group of patients. The patients were randomized to receive rhythm control using medications or ablation, or rate control to manage symptoms. In the rhythm control group, recurrent AF triggered additional attempts to cardiovert the patient. In the rhythm control group after two years, 19.4% had undergone ablation, 21% were taking flecainide, 17.7% were taking amiodarone or dronedarone (Multaq), and 35% were taking no antiarrhythmic drug. In the rate control group after two years, only 7% had undergone ablation and 5.7% were taking an antiarrhythmic drug. Approximately 90% in both groups were taking anticoagulants after two years. The study was stopped early due to the detection of an efficacy signal after a median follow-up of 5.1 years.

The primary outcome was a composite of two important things (stroke and cardiovascular death) and two less important things (hospitalization for heart failure and hospitalization for acute coronary syndrome). This composite was less likely in the rhythm control group (3.9 vs. 5.0 per 100 person-years; NNT = 90 over five years to prevent one event). The likelihoods of cardiovascular death (1.0 vs. 1.3 per 100 person-years; NNT = 67 over five years) and stroke (0.6% vs. 0.9% per 100 person-years; NNT = 67 over five years) were significantly lower in the rhythm control group, but the magnitude of those benefits was relatively small. Hospitalizations for heart failure and acute coronary syndrome were numerically less likely in the rate control group, but this difference was not statistically significant. The 12-item short-form health survey mental score was significantly lower in the rhythm control group (–1.2 points; 95% CI, –2.04 to –0.37), and patients in that group were significantly more likely to be in sinus rhythm (82.1% vs. 60.5%; $P < .05$; NNT = 5). Patients in the rhythm control group had significantly more serious adverse events attributed to

therapy, such as drug-induced bradycardia, toxicity caused by the antiarrhythmic drugs, pericardial tamponade, or major bleeding. There was no difference in the likelihood of being symptomatic and no difference in hospital days or in other health scores.

Study design: Randomized controlled trial (single-blinded)

Funding source: Government

Allocation: Concealed

Setting: Outpatient (any)

Reference: *Kirchhof P, Camm AJ, Goette A, et al.;* EAST-AFNET *4 Trial Investigators. Early* rhythm-control *therapy in patients with atrial fibrillation.* N Engl J Med. *2020;383(14):*1305-1316.

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iCanQuit Smartphone App Is Effective in Helping with Smoking Cessation

Clinical Question

Does a smartphone application based on acceptance and commitment therapy for smoking cessation increase a smoker's chance for sustained abstinence?

Bottom Line

Use of the iCanQuit smartphone app by smokers, who were recruited through Facebook and other Internet tools, produced higher cessation rates at 12 months (28.2%) than the QuitGuide app (21.1%). This translates into one additional person quitting for every 14 smokers who use the iCanQuit app compared with the QuitGuide app. The app is free and available for Android and Apple smartphones. (Level of Evidence = 1b–)

Synopsis

The investigators recruited patients (via Internet advertisements) who lived in the United States, owned a smartphone, could read English, and who desired to quit smoking in the next 30 days. The participants were randomly assigned, using concealed allocation, to be given one of two smartphone-based apps. iCanQuit (2Morrow, Inc.) uses an acceptance and commitment therapy model, which teaches skills for allowing urges to pass without smoking. Users play a game to complete a custom quit plan; complete 14 lessons; and accept, rather than avoid, smoking triggers via exercises, reminders, and progress tracking. The QuitGuide application focuses on avoiding cravings and provides information on the health consequences of smoking. For purposes of masking during the study, both applications were branded as "iCanQuit." The study researchers did not provide nicotine replacement therapy, but did not prohibit it. More than 87% of patients self-reported their smoking status after 12 months. The participants assigned to the iCanQuit app were significantly more likely to report 30 days of abstinence at 12 months (28.2%) than those assigned to the QuitGuide (21.1%), which translates into a number needed to treat of 14 (95% CI, 8.5 to 28.8). These rates might be slightly inflated, given that they are self-reported rather than biochemically confirmed, although it is unlikely that one group would report more optimistic data than the other. Use of the application was monitored, and the participants who used iCanQuit accessed the app more often, spent more time with it, and used it on more days.

Study design: Randomized controlled trial (double-blinded)

Funding source: Government

Allocation: Concealed

Setting: Outpatient (any)

Reference: *Bricker JB, Watson NL, Mull KE, et al. Efficacy of smartphone applications for smoking cessation: a randomized clinical trial.* JAMA Intern Med. *2020;180(11):*1472-1480.

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