POEMs

Hyaluronic Acid Equivalent to Sham Injections in Patients with Knee DJD

Clinical Question

Do hyaluronic acid injections in patients with knee degenerative joint disease (DJD) improve pain and function?

Bottom Line

The highest quality studies, which are now fairly plentiful, show that hyaluronic acid injections are only minimally better than sham injections in improving pain and function in patients with knee DJD. (Level of Evidence = 1a–)

Synopsis

These authors searched multiple databases and a clinical trial registry to identify randomized trials comparing hyaluronic acid injections with control treatments in patients with knee DJD. Studies had to include at least 30 patients in each group, include pain and function scales for which minimal clinically important differences are established, and have at least four weeks of follow-up. The authors do not describe the process of article inclusion. Ultimately, they included 19 studies with nearly 4,500 patients: 14 used sham injections as the comparator; two used usual care; and three used injections combined with some other active treatment. The authors did not find any statistically significant potential for publication bias. In the studies using sham injections, hyaluronic acid was slightly better at improving pain and function, but the improvement was not clinically important. Similarly, the improvements in double-blind trials were also not clinically significant. Among the other studies with designs at higher risk of bias, the magnitude of improvement in pain and function were really impressive. We have seen this story before: The stuff looks really effective until the studies are done correctly.

Study design: Meta-analysis (randomized controlled trials)

Funding source: Self-funded or unfunded

Setting: Outpatient (specialty)

Reference: *Jevsevar D, Donnelly P, Brown GA, Cummins DS. Viscosupplementation for osteoarthritis of the knee: a systematic review of the evidence.* J Bone Joint Surg Am. *2015;97(24):2047-2060.*

HENRY C. BARRY, MD, MS

Professor
Michigan State University
East Lansing, Mich.

Low High-Sensitivity Troponin I Level Accurate in Identifying Patients at Low Risk of Cardiac Events

Clinical Question

Is the high-sensitivity troponin I assay accurate in identifying patients with suspected acute coronary syndromes who are at low risk of cardiac events?

Bottom Line

The high-sensitivity troponin I assay used in this study was fairly accurate in identifying patients with chest pain who are at low risk of cardiac events. (Level of Evidence = 1c–)

Synopsis

These authors conducted a two-part study in adults presenting to the emergency department with suspected acute coronary syndromes. Each of the participating departments had been randomized into the standard care arms of trials designed

to determine if high-sensitivity troponin I levels will influence care and improve outcomes. In the first part, the derivation cohort, the researchers evaluated nearly 4,900 adults, 16% of whom had an acute myocardial infarction (MI) at the time of emergency department presentation and an additional handful who had a subsequent acute MI or died (1% and 2%, respectively) within 30 days. From this cohort, they determined that to achieve a 99.5% negative predictive value (determined a priori) a threshold value for high-sensitivity troponin I should be 5 nanograms per liter. In the second part of the study, the validation cohort, the researchers used two different groups and followed more than 1,400 patients for up to one year after enrollment. Approximately 0.5% of the patients with a low high-sensitivity troponin I level had an acute MI—nearly 100% negative predictive value. The researchers evaluated the performance across many subgroups (sex, age, prior heart disease, and so forth) and found no significant differences. After one year, 0.3% of the patients with a low high-sensitivity troponin I level had an incident acute MI and 0.3% had a cardiac death compared with 1.3% and 2.2% in those with elevated high-sensitivity troponin I level, respectively.

Study design: Cohort (prospective)

Funding source: Government

Setting: Emergency department

Reference: *Shah AS, Anand A, Sandoval Y, et al.; High-STEACS investigators. High-sensitivity cardiac troponin I at presentation in patients with suspected acute coronary syndrome: a cohort study.* Lancet. *2015;386(10012):2481-2488.*

HENRY C. BARRY, MD, MS

Professor
Michigan State University
East Lansing, Mich. ■