Physical Therapy More Cost-Effective Than Injections for Knee OA After One Year

Researchers taking a longer-range view say that opting for a glucocorticoid injection may not be the cheap-and-easy path it seems.

Review

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In this review: Cost-effectiveness of Physical Therapy vs Intra-articular Glucocorticoid Injection for Knee Osteoarthritis (JAMA Network Open)

The Message

When it comes to nonsurgical treatment for knee osteoarthritis, patients tend to take one of two main routes: a glucocorticoid injection or physical therapy. And while it may seem like getting the injection is the cheaper, one-and-done way to go, new research has revealed that after a year, physical therapy may in fact be the more cost-effective approach.

Part of the reason, according to the study, is because physical therapy tends to lead to larger improvements in quality-of-life after a year — while over the same time period, many patients who receive an injection wind up needing additional treatments, physical therapy, and even surgery, driving up average knee-related costs to near the cost of physical therapy. Authors believe the significant improvements in quality-adjusted life-years, or QALYs, associated with physical therapy justify the higher upfront costs.

The Study

The cost-effectiveness analysis was conducted using data collected during a randomized clinical trial that studied treatment for knee OA at two large military hospitals between 2012 and 2014. Researchers pulled knee-related costs and calculated QALYs for patients in the study to arrive at incremental cost-effectiveness ratios for patients who received a glucocorticoid injection versus those who were prescribed physical therapy. They then compared those ratios with "willingness to pay" estimates to get a sense of whether overall average costs of each type of treatment approached the tipping point beyond which payers likely would be to balk. The study was conducted in military hospitals that don't require out-of-pocket payments from patients, which meant researchers were able to analyze a more complete set of cost data. The typical course of physical therapy in the study consisted of eight visits over four weeks.

The QALYs were the effectiveness part of the cost-effectiveness equation. Using scores from the Western Ontario and McMaster Universities Osteoarthritis Index, aka WOMAC, researchers mapped the data to establish EuroQol 5-Dimension health utility scores, or EQ-5D, at baseline and all other follow-up points in the trial. Those scores were in turn plugged into a formula that calculated QALYs.

APTA members Daniel Rhon, PT, DPT, DSc, PhD; and Gail Deyle, PT, DPT, DSc, FAPTA, were among the co-authors of the study, with Rhon identified as lead author.

Participants

The 156 participants in the study had an average age of 56, with 51.9% being male. The physical therapy group reported an average of 92 months of symptom duration, while the injection group averaged 85 months. Most participants were determined to be at a 2 or 3 on the Kellgren-Lawrence grade, a radiographic measure of severity, indicating minimal to moderate OA severity. The treatment groups were equally divided at 78 for each intervention.

Findings

- Overall knee-related costs after one year were similar, with the glucocorticoid group costs averaging $2,113, and the physical therapy group averaging $2,131. When the costs were adjusted for age, body mass index, sex, smoking status, and radiographic severity, the physical therapy group's average cost rose by $615, but researchers determined the mean difference to be insignificant.
- Most of the participants in the glucocorticoid group received multiple injections over the course of one year, with 14 eventually going to physical therapy and four undergoing surgery.
- QALYs scores were where researchers found the most stark differences between approaches, with the physical therapy group averaging a score of .76 after one year, compared with a .69 average for the injection group.
- The incremental cost-effectiveness ratios were superior for the physical therapy group, at $8,103 per QALY for knee-related costs and $28,271 for all medical costs. Both numbers are well below the estimated willingness-to-pay threshold of $100,000 established by the authors.

More From the Study

Authors acknowledge that the injection option may seem more attractive to patients who may be wary of the initial cost or time commitment associated with physical therapy, but they assert that patients should be informed of how the decision may not be as clearcut as it seems. Between the typical need for multiple injections, the chance that they may wind up in physical therapy anyway, and the less-substantial gains in QALYs, patients may not find glucocorticoids to be the cheap and easy path after all.

"Patients should be made aware of these outcomes when considering the two treatment options as well as the short-term efficacy of a single glucocorticoid injection … in addition to the associated risks," authors write. Patients also need to understand that using an injection as a way to make physical therapy more tolerable in the short-term may also be a misconception, they add, writing that "the short-term improvement in pain was equal for both interventions in our trial."

Why It Matters

Osteoarthritis treatment cost the United States more than $80 billion in 2016, authors write, making it the eighth most expensive health condition in the country. The fact that nonsurgical treatments are almost always recommended as a first-line response to knee OA — and that those treatments are often injection or physical therapy, but typically not both — make it important to look at the value of different approaches, authors write. And that value determination needs to use a wide lens.

"Consideration for both short- and longer-term outcomes, treatment risks and adverse effects, and the downstream effect of each treatment choice, should influence and inform these decisions instead of cost alone," authors write. "Some interventions with lower initial costs may not carry that cost-effectiveness into