Article: Deyle G, Allen C, Allison S, Gill N, Hando B, Petersen E, Dusenberry D, Rhon D. Physical Therapy versus Glucocorticoid Injection for Osteoarthritis of the Knee. N Engl J Med 2020;382:1420-9. DOI: 10.1056/NEJMoa1905877

Study Design: randomized controlled trial

Abstract: Both physical therapy and intraarticular injections of glucocorticoids have been shown to confer clinical benefit with respect to osteoarthritis of the knee. Whether the short-term and long-term effectiveness for relieving pain and improving physical function differ between these two therapies is uncertain. We conducted a randomized trial to compare physical therapy with glucocorticoid injection in the primary care setting in the U.S. Military Health System. Patients with osteoarthritis in one or both knees were randomly assigned in a 1:1 ratio to receive a glucocorticoid injection or to undergo physical therapy. The primary outcome was the total score on the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) at 1 year (scores range from 0 to 240, with higher scores indicating worse pain, function, and stiffness). The secondary outcomes were the time needed to complete the Alternate Step Test, the time needed to complete the Timed Up and Go test, and the score on the Global Rating of Change scale, all assessed at 1 year. We enrolled 156 patients with a mean age of 56 years; 78 patients were assigned to each group. Baseline characteristics, including severity of pain and level of disability, were similar in the two groups. The mean (±SD) baseline WOMAC scores were 108.8±47.1 in the glucocorticoid injection group and 107.1±42.4 in the physical therapy group. At 1 year, the mean scores were 55.8±53.8 and 37.0±30.7, respectively (mean between-group difference, 18.8 points; 95% confidence interval, 5.0 to 32.6), a finding favoring physical therapy. Changes in secondary outcomes were in the same direction as those of the primary outcome. One patient fainted while receiving a glucocorticoid injection. Patients with osteoarthritis of the knee who underwent physical therapy had less pain and functional disability at 1 year than patients who received an intraarticular glucocorticoid injection.

NIH Risk of Bias: 8/11 (PEDRO)

Key Findings:

1. Knee OA met the criteria of the American College of Rheumatology
2. Data was long term. The final assessment was at one year after the study began.
3. Physical Therapy included, but was not limited to, Manual Therapy
4. Outcomes at one year, measured by WOMAC, and pain were better in the PT group
5. Costs were not much different

Reviewer Summary: This is a well done randomized controlled trial published in The England Journal of Medicine, whose impact factor is 91.24. Limitations occur in pragmatic trials which allow for clinician variation of the reported standardized treatment options. A strength of this study is undoubtably the one year follow up, showing a meaningful effect of PT with MT compared to injection. The paper contains an infographic for patient education.