Comparison of Platelet-Rich plasma to Corticosteroid Injections in Patients who have Mild to Moderate Knee Osteoarthritis: A Double-Blinded, Randomized, Control Trial

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INTRODUCTION: While the applications of biologic treatments, such as platelet-rich plasma (PRP) are growing, studies have shown mixed findings when comparing PRP with other intra-articular and soft tissue injections, necessitating highquality, level I analyses. As such, we aimed to evaluate and compare the clinical benefits of PRP compared to corticosteroid (CS) in patients who have mild to moderate symptomatic knee osteoarthritis in a double-blinded, randomized control trial.

METHODS: In this double-blinded, randomized control trial, 57 patients were enrolled who have symptomatic radiographically confirmed knee osteoarthritis. Patients were randomized to receive treatment with an intra-articular injection of PRP (n=29 or CS (n=28). We evaluated clinical outcomes, including the Western Ontario and McMaster Universities Arthritis Index (WOMAC), Knee Injury and Osteoarthritis Outcome Score (KOOS), and Visual Analog Scale (VAS) at baseline, 6-weeks, and 3 months after injection. We also determined if our clinical outcomes met the minimally clinically important difference (MCID) based on the following scores reported in the literature: 6.4 for WOMAC and 10.0 for KOOS.

RESULTS:

There was similar WOMAC (p=0.60), KOOS (p=0.55), and VAS (p=0.40) between the PRP and CS cohorts preoperatively. At 3-month follow-up, patients receiving CS had superior functional outcomes, including lower WOMAC scores (35.2 vs. 41.7, p=0.02) score and higher KOOS scores (61.5 vs. 52.7, p=0.01) compared to the PRP cohort, respectively. The MCID between CS and PRP of 6.4 was achieved for WOMAC scores at 3-month follow-up. The VAS was similar (40.9 vs. 40.9, p=0.73) between the PRP and CS cohorts at 3-month follow-up, respectively.

DISCUSSION AND CONCLUSION: When comparing PRP to CS injections in patients who have mild to moderate knee osteoarthritis, CS demonstrated superior clinical outcomes. Future randomized control, multi-arm trials are needed to corroborate this result with larger sample sizes. Based on the findings of this study, expectations regarding the clinical utility of PRP should be tempered in these patients.