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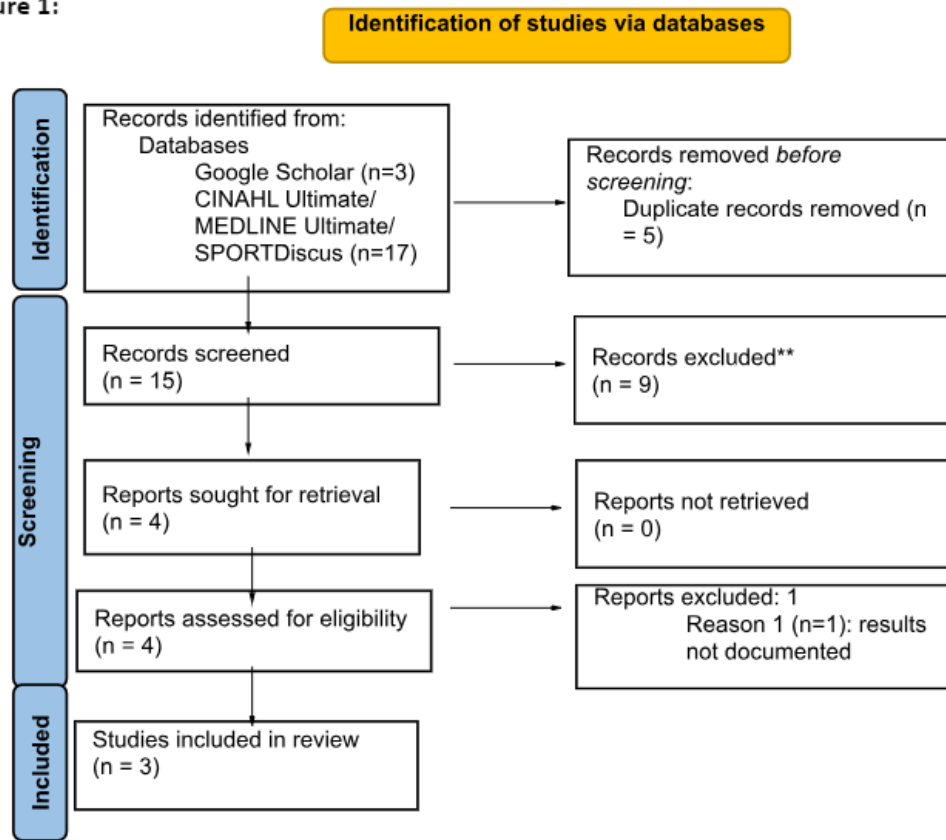
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Platelet-Rich-Plasma Injections vs. Corticosteroid Injections in the Reduction of Pain for Patients with Frozen Shoulder: A Critically Appraised Topic

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Focused Clinical Question: Is a platelet-rich plasma or a corticosteroid injection better for relieving pain for patients with frozen shoulder pathologies? **Data Sources:** To identify relevant research papers, Boolean searches were conducted on Google Scholar, CINAHL Ultimate, MEDLINE Ultimate, and SPORTDiscus databases from September 14th through September 25th, 2023. Key terms used were corticosteroid (CS) injection, platelet-rich-plasma (PRP) injection, frozen shoulder, and adhesive capsulitis. **Study Selection:** The inclusion criteria were: articles published from 2018-2023, Randomized Control Trials comparing PRP and CS injections, and studies that used visual analog scale (VAS). Additionally, each article selected summarized outcome measures in a table. **Data Extraction:** A VAS score was used as the main outcome measure for all three articles. Participants in each study were assessed pre-injection for PRP and CS injections for their pain levels. All articles collected VAS scores until 12 weeks post-injection and 2 studies continued to monitor patient pain levels through 24 weeks. **Summary Measures:** For statistical analyses, all studies included used a p-value of < 0.05 to determine statistical significance. P-values and mean VAS scores are used to compare articles within this CAT. **Evidence Appraisal:** The PEDro scale was used to appraise the quality of evidence included. **Search Results:** Three articles were selected for use in this CAT from the 15 articles that were screened. This process is outlined in Figure 1. **Data Synthesis:** In the study by Gupta et al., the mean VAS scores for PRP-injection were as follows: 67.4 (pre-injection), 43.23 (12 weeks), and 14.33 (24 weeks). The mean VAS scores for the CS-injection were 69.63 (pre-injection), 31.83 (12 weeks), and 31.63 (24 weeks). Statistical significance was found between groups at both 12 ($p=0.0001$) and 24 weeks ($p=0.0001$). In the study by Shahzad et al., the mean PRP-injection VAS scores were 8.9 (pre-injection) and 0.85 (12 weeks). The CS-injection had mean VAS scores of 9.5 (pre-injection) and 2.3 (12 weeks). Statistical significance was found with a p-value of 0.004. The third study by Somisetty et al., recorded mean PRP-injection VAS scores of 8.5 (pre-injection), 2 (12 weeks) and 1 (24 weeks). The mean VAS scores for the CS-injection were 8 (pre-injection), 3 (12 weeks), and 2 (24 weeks). Statistical significance was found at 12 and 24 weeks ($P=0.0011$). **Evidence Quality:** Results of article appraisal using the PEDro scale as follows: 8/10, 7/10, and 7/10. All articles lacked blinding of the participants and the therapist who administered the treatment. Two articles lacked blinding of the assessors as well. **Conclusions:** The purpose of this report was to compile the known evidence regarding the effect of PRP and CS injections on frozen shoulder. Grade A evidence found that PRP injections had significantly decreased VAS scores compared to CS for long-term results. Evidence was inconclusive for short-term benefits. Future research should be conducted to determine the best treatment for immediate relief.

Figure 1:



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71

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