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Focused Clinical Question Is PRP an effective alternative or supplement to conservative rehabilitation in reducing recovery time of collegiate athletes with recurrent hamstring injuries? Data Sources PubMed, Cochrane Library, CINAHL, SPORTSDiscus, ScienceDirect, and SagePub were searched using keywords PRP injection, hamstring, hamstring injury, and muscle. Reference list reviews and individual searches produced additional resources. Study Selection Inclusion criteria encompassed studies investigating effects of PRP on recovery time in hamstring or muscle injuries published after 2008, with at least Level IV evidence. Data Extraction Literature was reviewed to determine PRP effects on recovery duration as an outcome measure. Additional outcome measures included pain and disability subjective scores, and regeneration indications via MRI or ultrasonography. Summary Measures The main summary measures are mean time loss along with effects size. Other outcome measures included disability and VAS subjective scores, percent pain relief, and regenerative changes via MRI or ultrasonography. Evidence Appraisal Randomized controlled trials (RCTs) earned PEDro scale scores of 6 and 9 out of 10. Case-series and retrospective reviews could not be appraised. Studies in this critically appraised topic (CAT) have limited external validity. Three articles included only male subjects; one only females, and one mixed. Three involved college-age subjects, and two middle-age. Four included high-activity level subjects, and one low-level activity. Only one study reported sport (football). Search Results The search criteria produced five articles: two case series of varying sizes, one retrospective review, and two RCTs. Data Synthesis Clinical trials indicate PRP treatment results in a decrease in average time lost between 37 and 54% in athletes (effect sizes were moderate to large 0.46 - 0.97). The odds for patients in a PRP group to return to play earlier were 4.8 (95%CI 1.3-19.3) compared to a control group. Greater regenerative changes, and decreases in pain and disability subjective scores, compared to controls, were also demonstrated. Evidence Quality Based on the SORT scale, the level of evidence to support the use of PRP injections in hamstring injuries is a grade B. Conclusion Four out of five studies in this CAT provided evidence to support the effectiveness of PRP in muscle injuries, specifically hamstring strains. PRP, combined with rehabilitation, reduces recovery time, pain, and disability subjective scores, and increases regenerative changes. Only one article reported no significant differences between groups. Future large scale RCTs and long-term studies investigating both acute and recurrent hamstring injuries, involving both male and female subjects from varying sports, should be conducted to determine overall effects. Further research should aim to establish a universal protocol with optimal parameters for PRP injections. However, sufficient evidence exists to support the consideration of PRP in conjunction with rehabilitation to reduce recovery time in athletes with hamstring strains. Word Count: 446

References