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ABSTRACT

Clinical Scenario: A common overuse injury in athletics is plantar fasciitis. Plantar fasciitis is usually treated conservatively with the use of analgesics and anti-inflammatory medications like NSAIDs. When this condition becomes chronic and conservative methods have failed; a different intervention may be indicated. **Focused Clinical Question:** In patients with chronic plantar fasciitis, what is the effect on platelet rich plasma injection vs. corticosteroid injection on pain? **Search Strategy:** Pubmed, Proquest Nursing, Cochrane Library, and CINAHL Plus databases were searched using terms: Plantar fasciitis, platelet rich plasma injection, and corticosteroid injections. Inclusion criteria were patients with chronic plantar fasciitis that failed conservative treatment, platelet rich plasma injection, corticosteroid injection, and articles published after the year 2002. Exclusion criteria were publications dates prior to the year 2002 and chronic injuries other than plantar fasciitis. Initial search revealed 273 articles which were narrowed to eight articles after reviewing the inclusion and exclusion criteria. **Evidence Quality Assessment:** Eight articles were collected; all eight articles scored a two or three on the Oxford levels of incidence chart. PEDro scale scores ranged from a score of 4/10 to 6/10. **Results and Summary of Search:** Four out of eight articles concluded that platelet rich plasma is equally as effective as corticosteroid injection on reducing pain in patients. In the other four articles, platelet rich plasma was shown to be more effective than corticosteroid injection on reducing pain. Platelet rich plasma has a longer lasting effect than corticosteroid injection, but corticosteroid injection is less invasive and safer than platelet rich plasma injection. Platelet rich plasma proved to last up to twelve months in effectiveness where corticosteroid lasted up to six months post injection. Pain in all articles was measured using the visual analog scale (VAS). Strengths of the articles PEDro criteria were concealed randomly allocated groups that were similar at baseline testing and results reported for at least one key outcome had variability and were obtained from at least 85% patients that were in the article. Weaknesses included blinding of patients and assessors. **Clinical Bottom Line:** The conclusions based on the evaluated research is that platelet rich plasma is equally as, if not more, effective as corticosteroid injection on reducing pain in patients with chronic plantar fasciitis. Platelet rich plasma has a longer lasting effect than corticosteroid injection, but corticosteroid injection is less invasive and safer than platelet rich plasma injection. Both treatments showed improvement in patients with chronic plantar fasciitis and are effective based on the patient's symptoms and goals from treatment. However, platelet rich plasma may prove to be superior due to longer lasting effects of the treatment. The SORT score is an A level of recommendation. **Implications:** This information can be used to educate patients on possible treatments that they can choose from if conservative treatment of plantar fasciitis fails. Depending on state law and what the supervising physician allows, an athletic trainer may be able to perform this procedure and should know which treatment could be most effective for patients.

CLINICAL SCENARIO

Plantar fasciitis is a common overuse injury. It can be caused by a variety of mechanisms but is a repetitive use trauma to the plantar fascia. This stress can be intensified leading to plantar fasciitis with improper footwear, change in running surfaces, change in shoes, or repetitive use without rest including activities that stretch the plantar fascia like running, jumping, etc. This research is aimed to answer the question, in patients with chronic plantar fasciitis what is the effect on platelet rich plasma versus corticosteroid injection on pain? Patients must have failed conservative treatment to be eligible for participation in any of the articles. Pain is being measured based on the visual analog scale which is a rating of perceived pain to the patient. The importance of knowing the pain outcome of the treatment is how functional the patient can be due to perceived pain.

FOCUSED CLINICAL QUESTION

- In patients with chronic plantar fasciitis, what is the effect on platelet rich plasma injection vs. corticosteroid injection on pain?

SEARCH STRATEGY

- Pubmed, Proquest Nursing, Cochrane Library, and CINAHL Plus were searched using the terms: Plantar fasciitis, platelet rich plasma injection, and corticosteroid injections.
- Inclusion criteria were patients with chronic plantar fasciitis that failed conservative treatment, platelet rich plasma injection, corticosteroid injection, and articles published after the year 2002.
- Exclusion criteria were publication dates prior to the year 2002 and chronic injuries other than plantar fasciitis. Initial search revealed 273 articles.
- Articles were narrowed to eight articles after reviewing inclusion and exclusion criteria.

EVIDENCE QUALITY ASSESSMENT

- Each individual article was evaluated using the PEDro scale and the Oxford levels of evidence quality assessment scale.
- All eight articles scored a two or three on the Oxford levels of incidence scale as they were clinical trial studies.
- Thscale scores for the eight articles ranged from a score of 4/10 to 6/10. e PEDro

RESULTS AND SUMMARY OF SEARCH

- Four articles concluded that platelet rich plasma is equally as effective as corticosteroid injection on reducing pain in patients.
- Four articles concluded platelet rich plasma was shown to be more effective than corticosteroid injection on reducing pain in patients with chronic plantar fasciitis.
- Platelet rich plasma has a longer lasting effect on pain than corticosteroid injection in patients with chronic plantar fasciitis
- Corticosteroid injection is less invasive and is safer than platelet rich plasma injection for the patient.
- Platelet rich plasma proved to last up to twelve months in effectiveness on decreased pain
- Corticosteroid injection lasted up to six months post injection for effectiveness on decreased pain.
- Perceived pain of the patient in all articles was measured using the visual analog scale (VAS).
- Strengths of the articles were concealed randomly allocated groups that were similar at baseline testing and results reported for at least one key outcome, had variability in results, and were obtained from at least 85% patients that were originally in the article.
- Weaknesses of the articles collected included blinding of patients and assessors. This can be a decision of ethical practice as the treatments being discussed are surgical procedures.

RESULTS AND SUMMARY OF SEARCH, CONT.

Author	Number of Subjects	Outcomes	P-Value
Aksahin	60	Platelet Rich Plasma is as Effective as Corticosteroid	>0.05
Jain	46	Platelet Rich Plasma is More Effective	0.033
Kalaci	50	Platelet Rich Plasma is as Effective as Corticosteroid	0.21
Karimzadeh	36	Platelet Rich Plasma is as Effective as Corticosteroid	0.06
Mahindra	75	Platelet Rich Plasma is More Effective	0.41
Monto	40	Platelet Rich Plasma is More Effective	0.001
SAY	50	Platelet Rich Plasma is More Effective	0.05
Shetty	60	Platelet Rich Plasma is as Effective as Corticosteroid	0.483

CLINICAL BOTTOM LINE

- Conclusions based on the evaluated research is platelet rich plasma is equally as, if not more, effective as corticosteroid injection on reducing pain in patients with chronic plantar fasciitis.
- Platelet rich plasma was proven to have a longer lasting effect on pain than corticosteroid injection
- Corticosteroid injection is less invasive and safer than platelet rich plasma injection for the patient.
- Both treatments showed improvement in reduction of pain for patients and are effective based on the patient's symptoms and goals from treatment.
- Platelet rich plasma may prove to be superior due to longer lasting effects of the treatment on decreasing pain.
- SORT score is an A level of recommendation.

IMPLICATIONS

The information collected from the articles can be used to educate patients on possible treatments they may have to choose from if conservative treatment of plantar fasciitis fails. The failure of conservative treatment may lead to these more invasive procedures especially if pain is a factor in their performance or activity level. Depending on where an Athletic Trainer practices, state law and the supervising physician, may allow an athletic trainer to be able to perform these procedures and should know which treatment could be most effective for their patients based on their goals of treatment.

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