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Corticosteroid Injection vs Therapy vs Combination for Rotator Cuff Injuries

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Abstract

Rotator cuff pathologies seen in a primary care setting ranks third for musculoskeletal complaints seen by primary care providers. Rotator cuff pathologies can cause significant dysfunction in activities of daily living (ADLs), work tasks, and daily life. Some current treatment recommendations are intra-articular steroid injections, therapy only rehabilitation, or the combination of the two. This literature review researched articles comparing the effectiveness of steroid only treatments, therapy only and the combination of the two. There was conflicting evidence regarding which treatment was the most effective. Significant side effects for steroid injections were discovered which included rotator cuff rupture. Therapy demonstrated improvements with range of motion and decreasing pain. There were studies demonstrating the positive effects of combination of the two when compared to steroid injection and therapy only groups individually. There was one study that showed no difference between all three interventions. Given this information further research is indicated before a definitive answer can be concluded on which treatment approach is superior for rotator cuff pathologies. This author recommends that if a patient is a possible surgical candidate to omit the steroid injection and attempt physical therapy with orthopedic referral. If the patient is not a possible surgical candidate, then the combination of steroid injection and physical therapy should be recommended.

Introduction

A rotator cuff injury is a major concern when a primary care provider is considering treatment for a patient with rotator cuff pathology. When a primary care provider is considering treatment there appears to be inconsistences on which therapeutic approach is the best for the patient. Should a primary care provider suggest steroid injection only, physical therapy only, or the combination of the two? The research is conflicting on which treatment procedure is the best and there are varying recommendations that need to be considered. Which treatment has more efficacy on improving shoulder range of motion, decreasing pain, improving function, and prolonging or preventing surgical intervention? The purpose of the scholarly project is to review statistically significant literature in detail to determine which of the three treatments are more effective and which treatment a primary care provider should suggest when a patient presents with a rotator cuff pathology.

Statement of the Problem

What is the best way to treat a patient with a rotator cuff injury in a primary care setting? Should a provider use a steroid injection only, physical therapy only, or the combination of the two? There appears to be no clear recommendation on which intervention is the most effective. This paper is focused on helping primary care providers feel confident in deciding the proper treatment method for patients with rotator cuff pathologies.

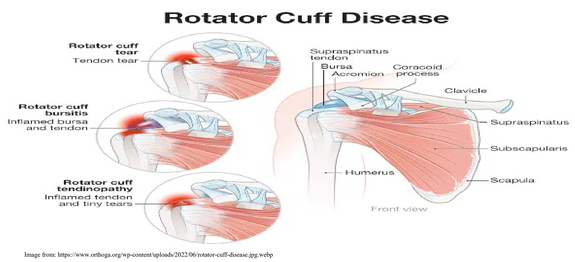

Image from: https://www.orthoga.org/wp-content/uploads/2022/06/rotator-cuff-disease.jpg.webp

Research Question

What intervention has better outcomes for rotator cuff pathology for adults who received either a steroid injection in the shoulder, therapy alone, or a combination of the two?

Literature Review

- Lin et al. (2022) concluded that a patient who received a steroid injection demonstrated they were 7.44 times more likely to have a rotator cuff tear when compared to the control group.
- Tilman et al. (2021) found a high risk for non-traumatic rotator cuff tears and rotator cuff ruptures with oral steroids with an odds ratio (OR) of 1.71 (95% CI of 1.52-1.93; p = <0.001) and with injected steroids OR of 1.42 (95% CI of 1.28-1.58; p = < 0.001).
- Tilman et al. (2021) found that those who took oral steroids were at grater risk of non-traumatic rotator cuff tear and rotator cuff rupture when compared to injected forms with an OR: 1.42 (95% CI of 1.28-1.58).
- Kuhn et al. (2013) found over a two-year period only 20% of the patients had surgical intervention who completed physical therapy only.
- Kuhn et al. (2019) found that a total of only 24% completed surgical intervention for their rotator cuff tear at the five-year mark.
- Dickinson et al. (2019) found that physical therapy demonstrated significant improvements over the non-physical therapy group.
- Dickinson et al. (2019) found that after 16 visits with physical therapy there was no significant difference with SPADI scores between the physical therapy and non-physical therapy group.
- Hajivandi et al. (2021) found that both the DASH (p=0.013) and the VAS (p=0.004) scores significantly reduced with all three intervention groups.
- Hopewell et al. (2021) were unable to demonstrate any statistical difference between all three groups except for an improved Shoulder Pain and Disability Index score at eight weeks with the steroid injection only group (CI 95% -11.10 to -3.67; p=<0.0001).

Discussion

- Steroid injections appear to decrease pain and improve ROM but there are significant risks with tendon integrity and increased percentage of apoptotic cells in the tendon (Hajivandi et al., 2021; Lin et al., 2022; Ramirez et al., 2018; & Tilman et al.,2021).
- It was discussed how there was significant improvements in many outcome measures for the physical therapy only interventions compared to non-therapy group and how physical therapy can prevent patients from receiving surgical interventions over a five-year period (Dickinson et al., 2019; Kuhn et al., 2013; & Kuhn et al., 2019).
- Hajivandi et al. (2021) demonstrated significant improvement for the combination group but had a small sample size of 96 patients.
- Hopewell et al. (2021) used a much larger sample size and does not demonstrate any significant improvement of the combination group over a year period.
- Roddy et al. (2020) provided evidence that there was improvement in the physical therapy led groups with two injection techniques but there was no significant statistical difference between the two injection techniques.
- There is research that suggests all three interventions are effective and even the combination of steroid injections and physical therapy are superior in some studies and one study showed no significant difference. Therefore, the author suggests that further research be completed in this area before a full recommendation can be made on how to treat patients with rotator cuff pathologies.
- At this present time based on the research in the project, the author of this scholarly project would recommend completing a comprehensive history and physical on patients who have a rotator cuff pathology. Once a diagnosis can be made on a rotator cuff pathology it will be vital for the provider to educate the patient on the risks and benefits for the interventions of steroid only, therapy only, or the combination of the two. The proper intervention should be selected based on shared decision making between the provider and the patient.

Limitations

This scholarly project does have a limitation with the number of articles. The articles were selected from only three databases and were limited to within five years from the start of this scholarly project. There could be older research that demonstrates that one of these interventions is superior to the other. The other limitation is the total number of articles reviewed. There was a total of 12 articles reviewed. Including more databases and increasing the time frame may increase the total number of articles that could be reviewed which might provide a better understanding of which intervention is more superior.

Applicability to Clinical Practice

Based on the research and conclusions made in this scholarly project this author has some advice. First and most importantly, it is important to discuss the risks and benefits of all treatment approaches with the patient. After it has been determined that these approaches are indicated for the patient by the provider, I would suggest the following as a general guideline. If a patient is a possible surgical candidate do not perform a steroid injection due to the adverse effects on the tissue of the tendon. A physical therapy evaluation and treatment for this patient should be recommended. If pain continues or does not improve after trialing physical therapy, consider orthopedic consultation for further evaluation and possible surgical intervention. If the patient is not a surgical candidate due to comorbidities or for other reasons the combination of the steroid injection plus physical therapy should be ordered to ensure the patient is getting the pain relief and improved shoulder function that he/she needs to perform tasks at home and/or work. If the patient continues to demonstrate pain or limited range of motion an orthopedic referral should be made.

Further research with a rigorous study design is warranted for this question to be fully answered. Conducting a new research study could allow us to answer this question fully.

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