

Risk Factors for treatment failure after Rotator Cuff Repair

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Objectives

Outcome following RCR is generally considered good to excellent, but some patients still report poor outcome. Several specific factors related to both the patient and the treatment itself are of importance for the outcome. Previous studies have identified prognostic factors for a good functional outcome. In this study, we have looked closer at patients with inferior outcome compared to a group with good clinical outcome two years after RCR measured by the Western Ontario Rotator Cuff (WORC) index. We aimed to identify factors associated with poor outcome.

Methods

A cohort of 733 consecutive patients treated with rotator cuff repair in a single orthopaedics unit was included between 2010 and 2014. Data were collected prospectively with 88% follow-up at two years. Patients with < 13% of improvement measured by the total WORC index were considered as treatment failures and selected for further analysis. We then compared the failures to patients with clinical improvement (WORC index $\geq 13\%$) at two years. Several known prognostic variables were analysed. We used the Chi-squared test and Student t-tests to test for significant differences between the groups.

Results

Ninetyseven patients with improvement < 13 points on the total WORC index were identified and compared to 550 patients with improvement ≥ 13 points. Sex, age, BMI, time from injury to surgery and preoperative WORC index were similar in the two groups. There was a significant higher number of smokers 19% vs 8% ($p<0.001$), higher number of patients with previous surgery to the ipsilateral shoulder 20% vs 9% ($p<0.001$) and a lower number of acute injuries 55% vs 63% ($p=0.02$) in the group with inferior outcome. The relative risk (RR) for failure was 2.3 ($p<0.001$) in smokers. RR=2.1 ($p<0.001$) in patients with previous shoulder surgery, RR=2.75 ($p<0.001$) in patients with an American Society of Anesthesiologists score (ASA) > 1, RR=1.7 ($p=0.03$) in patients where the repaired tendon did not heal.

Conclusion

Most patients (85%) had an improvement of > 13 points on the WORC index following RCR. Smokers, patients not classified as ASA 1, a non-healed tendon repair and patients with previous shoulder surgery have a significant increased risk for treatment failure.