



## Review Article

# Outcome assessment in the treatment of rotator cuff tear: what is utilized in Brazil?☆



Jorge Henrique Assunção\*, Eduardo Angeli Malavolta, Vitor Rodrigues Domingues, Mauro Emilio Conforto Gracitelli, Arnaldo Amado Ferreira Neto

Universidade de São Paulo, Faculdade de Medicina, Hospital das Clínicas, Instituto de Ortopedia e Traumatologia, São Paulo, SP, Brazil

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## ABSTRACT

This review evaluated the outcomes used in clinical studies involving rotator cuff tear published in the last decade in the two leading Brazilian orthopedic journals. A literature review was performed using the journals *Revista Brasileira de Ortopedia* and *Acta Ortopédica Brasileira*. It included all original clinical articles describing at least one outcome measured before or after any clinical or surgical intervention related to rotator cuff tear, published between 2006 and 2015. The authors evaluated range of motion, muscle strength, patient satisfaction, and tendon integrity and functional outcomes scores. There were 25 clinical studies published about rotator cuff in the two principal Brazilian orthopedic journals in the last decade, 20 case series (80%), one case-control (4%), and four cohorts (16%). Objective measures such as muscle strength, patient satisfaction, and evaluation of tendon integrity were little used. Range of motion measurements were performed in 52% of the articles. Evaluations of muscle strength and patient satisfaction were reported by 28% and 16% of the studies, respectively. Only 28% of the articles evaluated tendon integrity after surgery. Of these, 16% did so by magnetic resonance imaging and 12% by ultrasonography. The most used scale was the UCLA, present in 92% of the articles, while the Constant–Murley appeared in 20%. Scales deemed reliable, with high internal consistency and good responsiveness, were rarely used.

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☆ Paper developed at Universidade de São Paulo, Faculdade de Medicina, Hospital das Clínicas, Instituto de Ortopedia e Traumatologia, Grupo de Ombro e Cotovelo, São Paulo, SP, Brazil.

\* Corresponding author.

E-mail: [drjorgeassuncao@gmail.com](mailto:drjorgeassuncao@gmail.com) (J.H. Assunção).

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## Avaliação dos desfechos no tratamento da rotura do manguito rotador: o que usamos no Brasil?

R E S U M O

*Palavras-chave:*

Ombro

Avaliação de resultado de intervenções terapêuticas

Manguito rotador

Avaliamos os desfechos usados nos estudos clínicos que envolvem rotura do manguito rotador publicados na última década nos dois principais periódicos ortopédicos brasileiros. Foi feita uma revisão da literatura nos periódicos *Revista Brasileira de Ortopedia* e *Acta Ortopédica Brasileira*. Foram incluídos todos os artigos clínicos originais que descreviam ao menos uma medida de desfecho antes ou após alguma intervenção clínica ou cirúrgica referente ao manguito rotador publicados entre 2006 e 2015. Os desfechos avaliados foram arco de movimento, força muscular, satisfação, integridade tendínea e escalas clínicas. Foram publicados 25 estudos clínicos sobre manguito rotador nos dois principais periódicos ortopédicos brasileiros na última década, 20 séries de casos (80%), um estudo tipo caso-controle (4%) e quatro coortes (16%). Medidas objetivas como força muscular, satisfação do paciente e avaliação da integridade tendínea foram pouco empregadas. As medidas do arco de movimento foram descritas em 52% dos artigos. A avaliação da força muscular e a satisfação do paciente foram descritas em 28% e 16% dos estudos, respectivamente. Apenas 28% dos artigos avaliaram a integridade tendínea após a cirurgia. Desses, 16% o fizeram com a ressonância magnética e 12% com a ultrassonografia. A escala mais usada foi a da UCLA, presente em 92% dos artigos, enquanto a de Constant-Murley foi usada em 20%. Escalas consideradas confiáveis, com grande consistência interna e boa responsividade, raramente foram usadas.

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## Introduction

Shoulder pain has a high prevalence in the population, ranging from 7 to 26%.<sup>1</sup> Rotator cuff conditions, the main cause of pain in the shoulder girdle, affect 20% of the general population and up to 50% of patients over 80 years.<sup>2</sup>

Standardized clinical assessment is essential to determine the efficacy of a treatment and also to compare the results of different studies; it is crucial in clinical research.<sup>3,4</sup> Methods for evaluating the results of orthopedic treatment have been modified in recent years.<sup>5,6</sup> Previously, measurements were based on physical examination, by examining joint mobility and muscle strength. However, questionnaires or clinical scales have been developed that have improved the evaluation of results.<sup>7,8</sup> However, there is a wide variation in the measurement tools.<sup>9</sup> More than 40 scales are described to assess shoulder pain and function.<sup>10</sup> In addition, the measurement of the range of motion and strength, and the description of the imaging findings also do not have a consensus.<sup>9</sup>

Makhni et al.<sup>9</sup> recently published a review involving the six leading international orthopedic journals, and described the tools used to assess outcome in rotator cuff disorders. We do not have a survey showing the main types of clinical evaluation in Brazil. Most instruments have been developed and evaluated in the English language.<sup>10</sup> For these instruments to be used in Brazil, translation, cultural adaptation, as well as tests that evaluate measurement properties of these instruments, such as internal consistency, reproducibility, validity and responsiveness are recommended.<sup>5</sup>

The objective of this study was to evaluate the outcome used in clinical studies involving the rotator cuff published

in the last decade in the two main Brazilian orthopedic journals.

## Methods

### Design

A literature review was performed in the two main Brazilian orthopedic journals, *Revista Brasileira de Ortopedia* (RBO) and *Acta Ortopédica Brasileira*. The period covered was one decade (January 2006 to December 2015). This study was approved by the local Ethics Committee with number 1197.

### Search strategy

The search strategy initially included the reading of all titles of the articles by one of the authors (JHA), using the journals' table of contents. In cases of doubt with the reading of the title, the abstract was evaluated. This way, all articles that did not involve the shoulder joint were excluded. Then the abstracts were read by three authors (JHA, EAM and VRD) and, if necessary, the full text, to determine if the article fit the selection criteria. In case of disagreement in the selection of a particular article among the three authors, whether including it or not was defined by consensus.

### Selection criteria

All original clinical articles (randomized controlled trial, cohort, case-control and case series) that included at least

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