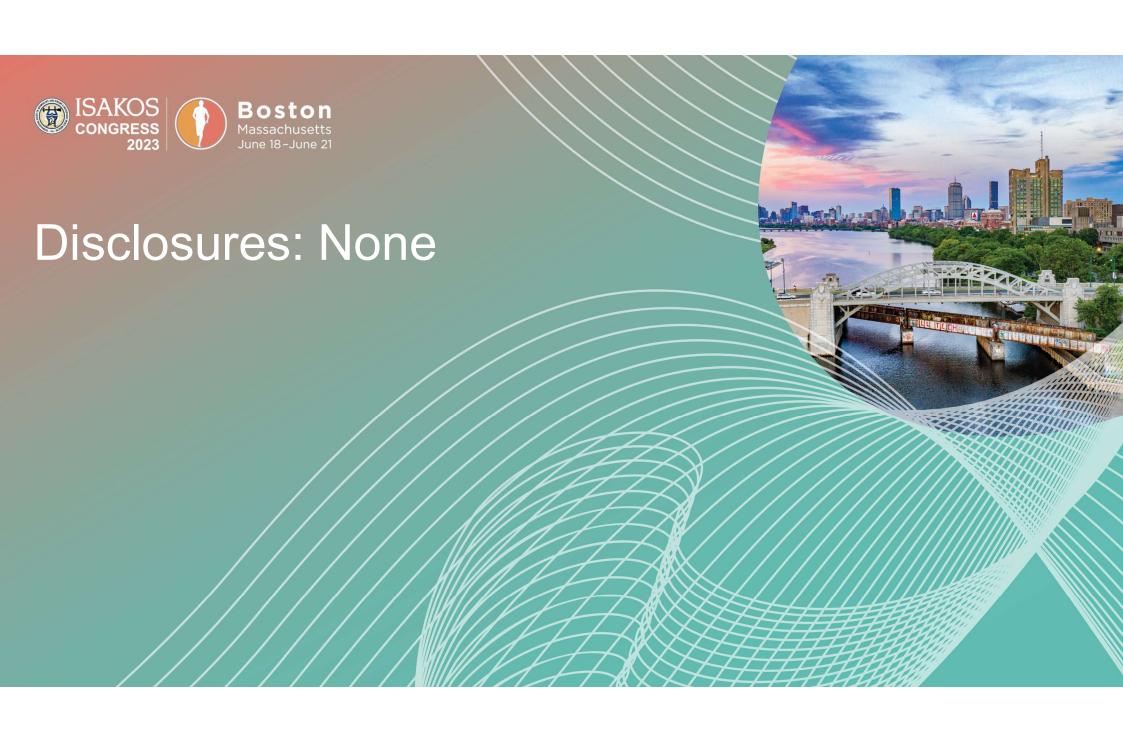Title: Minimal Clinically Important Difference (MCID) of the Oxford Shoulder Score for Arthroscopic Rotator Cuff Repair at 5 Years Post-Operatively

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Disclosures: None

Introduction

- Rotator cuff tears are among the most common disorders of the shoulder girdle requiring surgical management, and arthroscopic rotator cuff repair has proven to be an effective treatment option across multiple age groups, including elderly patients.

- Surgeons continue to strive towards improved surgical outcomes, with modifications of surgical techniques, evaluation of radiographic parameters, and optimization of multi-modal analgesia.

Introduction

- How then do we define surgical success?
  - Clinician-Reported Outcomes (ClinROs)
  - Patient-reported Outcome Measures (PROMs)
  - Radiological Outcomes (Ultrasonography, MRI scans)
  - Longevity/Survivorship of repair (Re-tear rates)

- The minimum clinically important difference (MCID) represents the smallest improvement considered worthwhile by a patient. It bridges the gap between statistical significance and clinical relevance.

Methodology

- Between 2015-2017, <u>123</u> patients who underwent arthroscopic rotator cuff repair performed by a fellowship-trained shoulder surgeon were included in this study.

- All patients had documented full-thickness rotator cuff tears visualized on <u>ultrasonography</u> or <u>MRI</u> of the shoulder. All patients had pre-operative plain shoulder radiographs documenting the lack of glenohumeral arthritis, as per the surgeon's standard practice.

- These patients were prospectively followed-up and evaluated at 6, 12, 24, and finally 60 months post-operatively. The <u>Oxford Shoulder Score (OSS)</u> was one of the PROMs used to capture clinical outcomes. Patient <u>Satisfaction</u>, as well as fulfilment of <u>Expectations</u>, were captured as well.

Methodology

- The MCID for OSS was determined through 2 methods:
  - Anchor-based linear regression approach
  - Distribution-based approach

- For the <u>anchor-based approach</u>:
  - Patient Satisfaction and Expectation Fulfilment used as anchors
  - Change in OSS compared across levels of satisfaction and expectation fulfilment

- For the <u>Distribution-based approach</u>:
  - Standard Deviation-based estimated determined as 0.5*SD of OSS at 60 months

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Results

- Total of 123 patients:
  58 male, 65 female
  Mean age: 56.6y (SD 10.4) for males, 59.2y (SD 9.6) for females

- Mean pre-op OSS: 29.8 (10.5)
  Mean post-op OSS at 6, 24, and 60 months: 19.4 (8.5), 14.4 (5.5), and 14.0 (4.9) respectively

- Mean satisfaction rate at 5y post-op: 95%

- **5 year MCID of OSS**
  - Anchor-based linear regression approach: **2.6-2.8**
  - Distribution-based approach: **2.5**
  - Taking the higher value – proposed 5 year MCID of OSS: **2.8**

Discussion

- Currently, MCID still the most popular method for examining clinically relevant differences.

- More recently, Patient Acceptable Symptomatic State (PASS) and Substantial Clinical Benefit (SCB) have also emerged as criteria for patient-based treatment assessments.

- Previously described MCIDs for rotator cuff repairs:
  - 12 month f/u
    - **ASES**: 11.1 (Cvetanovich et al, JSES 2019), 21.0 (Kim et al, AJSM 2020),
    - **UCLASS**: 3.0 (Xu et al, J Orthop 2019), 6.0 (Kim et al, AJSM 2020)
    - **CSS**: 4.6 (Cvetanovich et al, JSES 2019), 6.7 (Xu et al, J Orthop 2019)
    - **OSS**: 3.3 (Xu et al, J Orthop 2019)

  - 24 month f/u
    - **UCLASS**: 2.9, **CSS**: 6.3, **OSS**: 2.7 (Xu et al, J Orthop 2019)

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Discussion

- To our knowledge, this is the first study to report on MCID of PROMs at 5 years post-operatively.

- Our institution plans to expand upon this by reporting on the other shoulder PROMs, as well as expanding into PASS and SCB at 5 years post-operatively. It is our hope that with multi-centre collaboration, larger numbers may help reduce bias and increase external validity of our findings.

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Conclusion

- The authors propose a statistically significant MCID value for OSS at 5 years post-arthroscopic rotator cuff repair: **2.8**

- There is still a paucity of literature with regards to outcomes of rotator cuff repair beyond 2 years post-operatively

- The authors hope this value can be used as a benchmark for interpretation of clinical findings, as well as power analyses for future comparative studies.

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