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Outcomes of Large Rotator Cuff Repair with and without Augmentation: Patient-Reported Outcomes, and Radiographic Findings

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Faculty Disclosure Information

- No disclosures

Introduction

- **Background**:
  - Large Rotator Cuff Repairs (RCR) (3–5 cm) have high retear rates, especially in revisions
  - Dermal allograft augmentation (AUG) may improve healing
- **Purpose**:
  - Compare outcomes of RCR with vs. without AUG
  - Evaluate revision cases specifically

Methods

- **Study Design**: Retrospective comparative study (Level III)
- **Inclusion**: Large tears (3–5 cm), primary or revision repairs
- **Exclusion**: Massive/irreparable tears, prior arthroplasty, incomplete data

Methods

- **RCR**: Standard arthroscopic repair with suture anchors
- **AUG**: Dermal allograft added over repair
- **Outcomes**:
  - WORC, DASH scores at 2 years and final follow-up
  - Radiographic AHI at 1 year

Results – Demographics

Key findings:

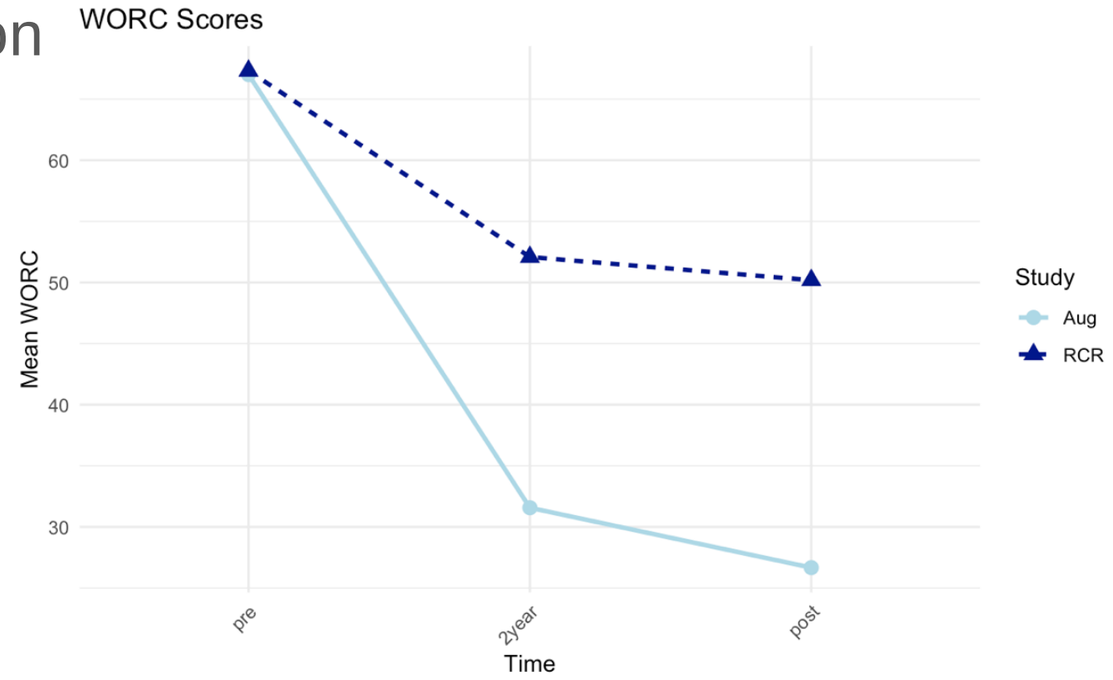
- Comparable age, BMI, and sex
- AUG had higher revision rate (p=0.01)

Variable	AUG (N=29)	RCR (N=30)	P-value
Age (years)	58.54 ± 8.39	56.57 ± 10.56	0.43
BMI (kg/m²)	29.96 ± 6.38	29.49 ± 6.91	0.79
Postop MRI (months)	18.27 ± 15.06	17.51 ± 15.39	0.82*
Sex (Female: Male)	9:21	14:16	0.29
Revision Surgery (%)	11 (18.3%)	2 (3.3%)	0.01^
Required Revision (%)	4 (7.1%)	8 (14.3%)	0.33^

Results – WORC score

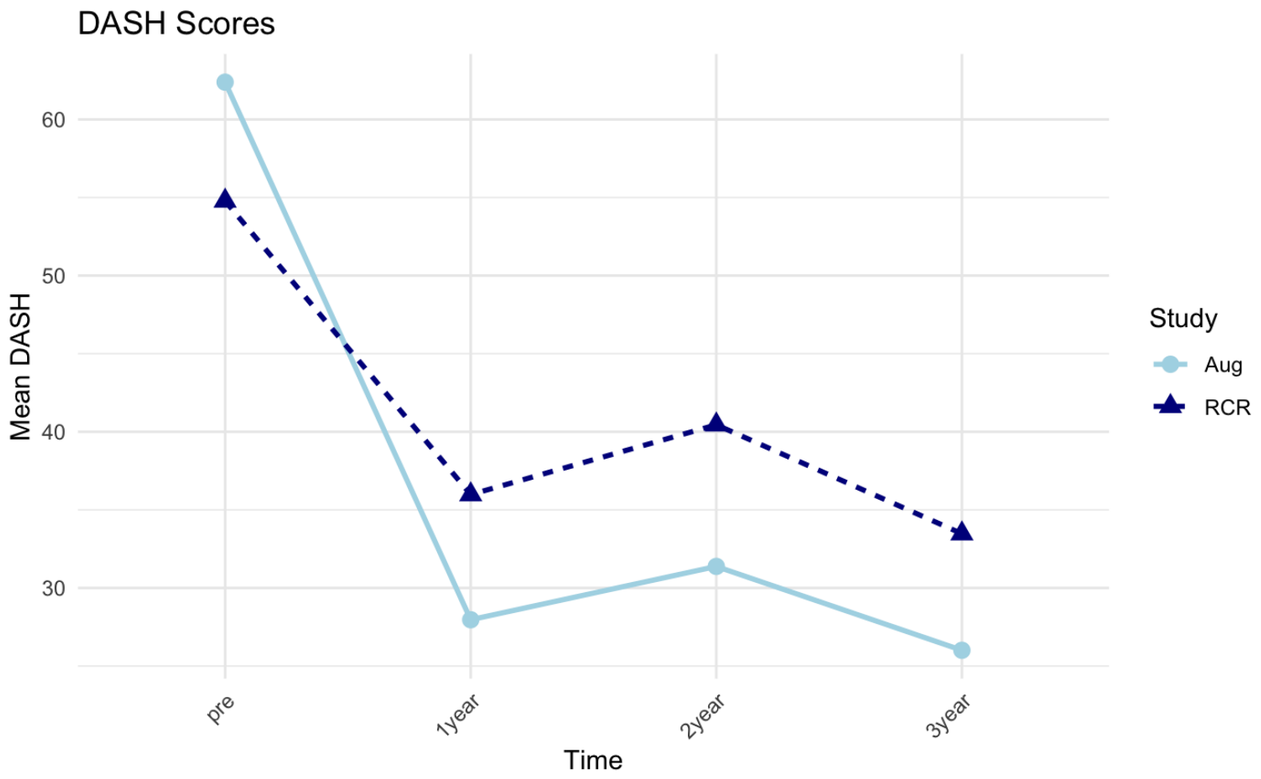
WORC Scores

- Include **Figure 1**
- Higher WORC scores in AUG at 2 years and final follow-up ($p<0.05$)
- Significant group × time interaction



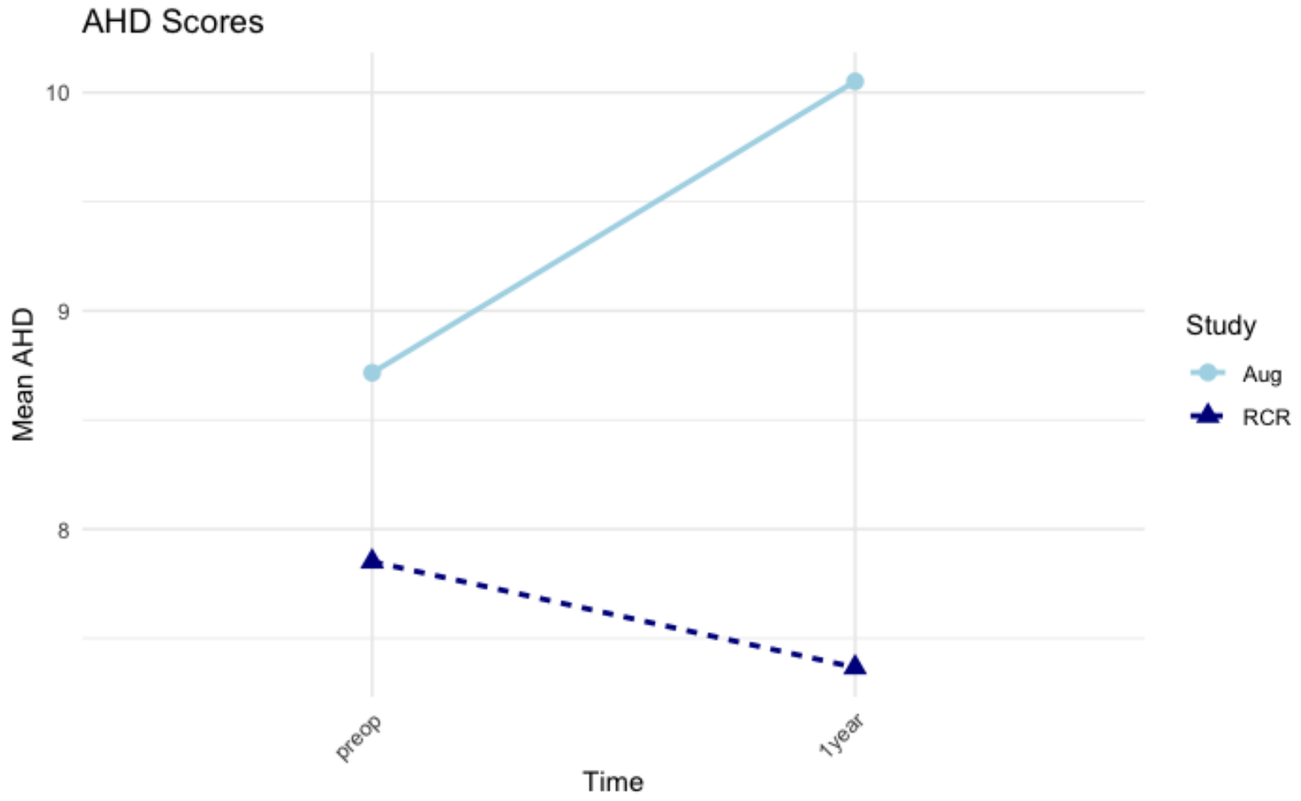
Results – DASH score

Both groups improved (p<0.05); no difference between groups



Results – Radiographic outcomes

Trend toward greater AHI in AUG (10.05 mm vs. 7.37 mm, p=0.05)



Discussion

- **Key findings**:
  - AUG improved WORC scores and structural integrity
  - Benefit persisted in revision cases

- **Literature context**: Aligns with prior RCTs and case series

Lee et al. (2022, RCT): Allograft augmentation reduced retear rates and improved ASES scores at 5-year follow-up.
Pasqualini et al. (2022): Highlighted mechanical and biologic benefits of dermal patches.
Gaidici et al. (2024): Case series showed improved functional scores (ASES, SANE, SST) in large/massive tears.
Kantanavar et al. (2024): Augmented group had better ROM and lower retear rates.
Namdari et al. (2021), Merolla et al. (2025): Demonstrated sustained benefits in revision repairs.

Limitations & Conclusion

- **Limitations**:
  - Retrospective design, short-mid follow-up, AHI on xray vs. MRI
- **Conclusion**:
  - AUG enhances outcomes in large RCRs
  - Supports use in complex/revision scenarios

References:

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Namdari S, Nicholson T, Brolin TJ, et al. *Healing and Functional Results of Dermal Allograft Augmentation in Complex and Revision Rotator Cuff Repairs*. Am J Sports Med. 2021;49(8):2042-2047.

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