Validated Pediatric Functional Outcomes of All-Epiphyseal ACL Reconstructions: Does Reinjury Affect Outcomes?

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Objectives
Use patient-oriented, pediatric-specific clinical outcome measures to assess All Epiphyseal-ACL Reconstruction (AE-ACLR) and examine how pertinent surgery-related variables affect patient-reported outcomes.

Methods
• Query of AE-ACLR patients that underwent surgery between April 2009 and January 2015 with a minimum of six months follow-up.
• Of the 140 subjects obtained in the query, two were excluded for atypical presentations.
• 50 subjects completed an online survey comprised of the Pedi-IKDC, HSS Pedi-Fabs, and PROMIS physical functionality scores with an additional questionnaire regarding subsequent re-injury.

Results
• 37 males and 13 females underwent AE-ACLR and completed the survey.
• Six subjects (4 males, 2 females) re-tore their AE-ACLRs an average of 2.8 years postoperatively (CI: 1.6-4.0).
• Average age at initial injury was 11.2 years (CI: 9.3-13.0) for re-tear group compared to 12.3 years (CI: 11.8-12.8) for intact group.
• Pedi-IKDC score: mean of 94.5 for combined groups
  • Re-tear: 91.4 (CI: 83.9-99)
  • Intact: 94.9 (CI: 93.4-96.4)
• PROMIS score: mean of 99.1 for combined groups
  • Re-tear: 98.0 (CI: 94.8-101.2)
  • Intact: 99.3 (CI: 98.7-99.8)
• HSS-Pedi Fabs: mean of 22.3 for combined groups
  • Re-tear: 21.8 (18.9-24.7)
  • Intact: 22.4 (20.1-24.7)
• Outcome scores similar across ages

Conclusions
• Preliminary data demonstrates excellent average outcomes among patients undergoing AE-ACLR.
• 12% of patients suffered re-tears and trended toward poorer Pedi-IKDC and PROMIS scores.
• No statistically significant difference between age at injury among AE-ACLR re-tear and intact groups, though n=6 for re-tear group.

Discussion
• This study represents an initial step toward identifying possible age, gender, and functionally-based risk factors for ACL re-tear in patients undergoing AE-ACLR.
• A larger sample size is needed to find statistically significant differences between intact and re-tear groups.

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