Athletes With Bone-Patellar Tendon Bone Autograft for ACL Reconstruction Were Months Slower to Meet Rehabilitation Milestones and Return to Sport Criteria Than Athletes With Hamstring Tendon Autograft or Soft Tissue Allograft: Secondary Analysis From the ACL-SPORTS Trial

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Objective

Graft choices for athletes undergoing anterior cruciate ligament reconstruction (ACLR) include bone-patellar tendon-bone (BPTB) and hamstring tendon (HT) autografts, and soft tissue allografts (ALLO). The objective was to assess time to meet clinical milestones by graft type in athletes who completed a RTS program after ACLR.

Methods

79 athletes enrolled after ACLR (ALLO n=18, BPTB n=24, HT n=37). Time from surgery to meet 1) enrollment criteria (≥12 weeks post-op, ≥80% isometric quadriceps strength index (QI), minimal effusion and full knee range of motion (ROM), and 2) RTS criteria (≥90% QI, hop testing limb symmetry, and patient reported outcomes) was calculated. Quadriceps strength, hop performance and patient-reported outcomes were measured before and after training, and at one year post-operative. Descriptive statistics, Chi-square tests, and one-way ANOVAs (α=.05) were used to analyze differences among graft types.
Results

On average, the BPTB group (28.5±7.6 weeks) took longer to meet enrollment milestones than the HT (22.5±7.6, p=.007) and ALLO (18.9±5.8, p<.001) groups. The BPTB group (44.7±15.8 weeks) took longer from surgery to meet RTS criteria than the HT (32.5±9.9, p=.001) and ALLO (29.3±9.0, p<.001) groups. QI after training for the BPTB group (86.2±11.4) was lower than the HT (96.1±12.9, p=.004) and ALLO (96.9±5.9, p=.009) groups.

Conclusions


Key Words: ACL reconstruction, knee, outcome measures, rehabilitation, return-to-sport