

Results Are Similar Two Years After Acute or Delayed Anterior Cruciate Ligament Reconstruction. A Randomized Controlled Trial

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Objectives: Acute ACLR has been avoided since the 1990's due to reports of postoperative stiffness. But are these risks still valid with modern arthroscopic techniques? The aim of this randomized controlled trial was to assess the impact of the time between injury and reconstruction on the outcome after ACLR. Our hypothesis was that acute ACLR with semitendinosus graft can be performed safely.

Methods: The primary endpoint was ROM at three months after surgery. A power calculation revealed the need for 64 patients to detect a ROM difference of 5 degrees between the groups (5% significance level). 70 patients with a high recreational activity level (Tegner ≥ 6) who presented with an acute ACL injury were randomized to an acute reconstruction within 8 days from the injury or delayed reconstruction (after normalized ROM) 6-10 weeks after the injury. Fixation was with Endobutton in femur and a metallic interference screw in tibia. The rehabilitation was performed at the same physiotherapy center for all patients. Follow up assessment was performed by a physiotherapist not involved with the rehabilitation. The follow up at 24 months included ROM, Lachman, instrumented laxity with Rolimeter, pivot shift, one leg hop index, Biodex, IKDC, KOOS, Lysholm and Tegner Activity level, and a VAS question regarding knee function and the knee function's effect on activity level.

Results: Seventy percent of the patients were males, mean age at the time of surgery was 27 years (18 -41) and the median pre-injury Tegner level was 9 (6-10) with no differences between the groups. 64 (91%) patients were assessed at three months with no difference according to the primary endpoint. Median Tegner level was restored to pre-injury levels in both groups after one year, and did not change between one and two years. 63 (90%) patients were available for the 2-year follow up. There was one graft rupture and one contralateral ACL injury in both groups. There was additional surgery in 15% of the acute patients and in 31% in the delayed (n.s.). The mean instrumented laxity was 1.8 mm in the acute and 2.0 in the delayed group. There were no positive pivot shift in the acute group and 6 patients with grade 1 or not possible to perform in the delayed group (p=0.039). IKDC revealed no significant differences between the groups. Lysholm score was 87 in both groups. KOOS values showed no significant difference between the groups. VAS response to the question "How is your knee working on a scale from 0-100? (100 = best)" was 81 in the acute and 71 in the delayed group (p=0.1) and "How does your knee affect your activity level? (100 = no affection)" the mean score was 75 in the acute and 67 in the delayed group (p=0.3). Functional strength (one leg hop index >90%) was 85% in the acute and 67% in the delayed group (n.s).

Conclusion: We found no increased risk of arthrofibrosis after acute ACLR. Good results can be achieved at two years regardless of ROM and swelling in the acute stage.

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