Treatment for acute anterior cruciate ligament tear: five year outcome of randomised trial

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Abstract

Objective To compare, in young active adults with an acute anterior cruciate ligament (ACL) tear, the mid-term (five year) patient reported and radiographic outcomes between those treated with rehabilitation plus early ACL reconstruction and those treated with rehabilitation and optional delayed ACL reconstruction.
Design Extended follow-up of prospective randomised controlled trial.
Setting Orthopaedic departments at two hospitals in Sweden.
Participants 121 young, active adults (mean age 26 years) with acute ACL injury to a previously uninjured knee. One patient was lost to five year follow-up.
Intervention All patients received similar structured rehabilitation. In addition to rehabilitation, 62 patients were assigned to early ACL reconstruction and 59 were assigned to the option of having a delayed ACL reconstruction if needed.
Main outcome measure The main outcome was the change from baseline to five years in the mean value of four of the five subscales of the knee injury and osteoarthritis outcome score (KOOS4). Other outcomes included the absolute KOOS4 score, all five KOOS subscale scores, SF-36, Tegner activity scale, meniscal surgery, and radiographic osteoarthritis at five years.
Results Thirty (51%) patients assigned to optional delayed ACL reconstruction had delayed ACL reconstruction (seven between two and five years). The mean change in KOOS4 score from baseline to

five years was 42.9 points for those assigned to rehabilitation plus early ACL reconstruction and 44.9 for those assigned to rehabilitation plus optional delayed reconstruction (between group difference 2.0 points, 95% confidence interval −8.5 to 4.5; P=0.54 after adjustment for baseline score). At five years, no significant between group differences were seen in KOOS4 (P=0.45), any of the KOOS subscales (P≥0.12), SF-36 (P≥0.34), Tegner activity scale (P=0.74), or incident radiographic osteoarthritis of the index knee (P=0.17). No between group differences were seen in the number of knees having meniscus surgery (P=0.48) or in a time to event analysis of the proportion of meniscuses operated on (P=0.77). The results were similar when analysed by treatment actually received.
Conclusion In this first high quality randomised controlled trial with minimal loss to follow-up, a strategy of rehabilitation plus early ACL reconstruction did not provide better results at five years than a strategy of initial rehabilitation with the option of having a later ACL reconstruction. Results did not differ between knees surgically reconstructed early or late and those treated with rehabilitation alone. These results should encourage clinicians and young active adult patients to consider rehabilitation as a primary treatment option after an acute ACL tear.
Trial registration Current Controlled Trials ISRCTN84752559.