

A Pilot Randomised Controlled Trial Comparing Meniscal Allograft Transplantation to Physiotherapy: Clinical Outcomes

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Summary:

First RCT meniscal allograft transplantation v Physiotherapy, a clinically meaningful and statistically significant improvement in the KOOS4 score favouring surgery was seen. Other patient reported outcomes were not statistically significant in this pilot investigation. These results provide the best quality evidence to date of the symptomatic benefits of meniscal allograft transplantation.

Abstract:

Purpose

Meniscal allograft transplantation has been performed for over 30 years but has never been rigorously evaluated for efficacy. The aim of this study was to perform the first randomised controlled trial (RCT) comparing meniscal allograft transplantation to physiotherapy.

Materials and Methods

A single centre pilot RCT with parallel preference groups was performed on participants with a symptomatic knee compartment that had previously had a (sub)total meniscectomy. Participants were randomised to either meniscal allograft transplantation or a personalised physiotherapy programme, and stratified for limb malalignment. Participants not willing to be randomised entered the preference groups. The Knee injury and Osteoarthritis Outcome Score (KOOS), International Knee Documentation Committee (IKDC) score, Lysholm score and complications were collected at baseline and four, eight and twelve months following the interventions.

Results

Thirty-six participants entered the study; 21 were randomised (mean age 27.5 years, 81% lateral meniscectomies) and 15 chose their treatments (mean age 28.7, 74% lateral meniscectomies). Baseline demographics and treatment outcomes were similar between the randomised and preference groups, allowing pooling of data. The mean improvement in patient reported outcomes at one year in the meniscal allograft transplantation and physiotherapy groups respectively were: 24.3 and 12.5 in the KOOS4 composite score ($p=0.03$), 18.8 and 10.4 ($p=0.16$) in the IKDC score and 20.4 and 13.1 ($p=0.22$) in the Lysholm score. There were five complications in the meniscal allograft transplantation and one in the physiotherapy groups.

Conclusions

In this first RCT assessing efficacy of meniscal allograft transplantation, a clinically meaningful and statistically significant improvement in the KOOS4 score favouring surgery was seen. Other patient reported outcomes were not statistically significant in this pilot investigation. These results provide the best quality evidence to date of the symptomatic benefits of meniscal allograft transplantation. However, a multi-centre RCT is required to further investigate this question.