

12<sup>th</sup> International Conference on

# ORTHOPEDICS, OSTEOPOROSIS & TRAUMA

November 13-14, 2019 | London, UK

## Predictors of meniscal allograft transplantation outcome: A systematic review

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This systematic review investigates factors associated with outcomes after Meniscal Allograft Transplantation (MAT). The PubMed, Scopus and Cochrane Central Register databases were used to search relevant articles in April 2018. Studies that evaluated at least 1 association between a factor and outcomes were extracted. Of 3381 titles, 52 studies were finally analyzed. Data about predictors, Patient Reported Outcome scores (PROMs) and failure rates were extracted for quantitative and qualitative analysis. A total of 3382 patients and 3460 transplants were identified. Thirty different predictors were reported in the current MAT literature, 18 of which by at least 2 studies. Subgroup analysis showed that lateral MAT had higher postoperative values than medial MAT in Lysholm ( $p=0.0102$ ) and IKDC ( $p=0.0056$ ) scores. Soft tissue fixation showed higher postoperative IKDC scores than bone fixation ( $p=0.0008$ ). Fresh frozen allografts had higher Lysholm scores ( $p<0.0001$ ) and showed significantly lower failure rates ( $p<0.0001$ ) than cryopreserved allografts. Age ( $p<0.015$ ,  $\beta=0.80$ ), sex ( $p<0.034$ ,  $\beta=-8.52$ ) and BMI ( $p<0.014$ ,  $\beta=-4.87$ ) demonstrated an association with PROMs in the regression model. Qualitative analysis found moderate evidence that a higher number of previous procedures in the same knee is an independent predictor of transplant failure. Conflicting evidence was found with regard to chondral damage, time from meniscectomy, smoke, sport level, worker's compensation status and preoperative Lysholm score as predictors of outcomes. Our review suggests that the ideal candidate to undergo MAT is a young male of normal weight with no previous knee surgeries, treated with a lateral isolated procedure.

### Biography

Daniele Fanelli is currently a Foundation Year 1 doctor at Aberdeen Royal Infirmary with a strong interest in Orthopaedic research. He has worked as a research collaborator for the Trauma and Orthopaedics department of the Magna Graecia University, Catanzaro, Italy. His research work has mainly focused on the area of foot and ankle surgery and meniscal transplantation. He is also a postgraduate student at the University of Glasgow, undertaking a MSc in Health-Professions Education.

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