Scaffolds Based Therapy for Osteochondral Lesion of Talus: A Systematic Review
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Category: Ankle,Arthroscopy,Basic Sciences/Biologics

Keywords: scaffold, osteochondral lesion, talus

Introduction/Purpose: Numerous surgical treatment strategies for osteochondral lesions of the talus (OLT) have been proposed, but ideal treatment has yet to be established. Scaffold based-therapy for OLT is quickly becoming more popular as a new approach for reparative treatment. The purpose of this study was to systematically review published literature reporting clinical outcome of scaffold based-therapy for OLT and establish whether sufficient evidence exists to support use of scaffolds for OLT.

Methods: A systematic search of the MEDLINE and EMBASE databases was performed in June 2016 based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Included studies were evaluated with regard to the level of evidence (LOE), quality of evidence (QOE), variable reporting outcome data and clinical outcomes. Modified Coleman Methodology Score (MCMS) was used to evaluate the QOE.

Results: Twenty-five studies with 678 ankles were included; 96% were either LOE 3 or 4, and all studies were of poor or fair QOE. There were 6 different scaffold repair techniques, including one-step and two-step procedures. The categories of general demographics (93%) and patient-reported outcome data (84%) were well reported. The study design and imaging data were less reported with 72% and 78% respectively. Clinical variables (50%) and patient history (30%) were the least reported in studies. Clinical outcomes were evaluated using a number of different scoring systems. The weighted mean AOFAS score improved from 60.5 ± 6.3 preoperatively to 86.9 ± 8.4 at a weighted mean 41.3 month follow-up. Six studies reported that weighted mean 71.6% of patients returned to sport activity at previous level.

Conclusion: This systematic review demonstrated that there is a lack of supporting data to justify current scaffold based therapy for treatment of OLT, although a lot of available commercial scaffolds for OLT exist. Further well-designed studies are necessary to determine the effectiveness of scaffold based therapy for OLT, especially compared with the available traditional treatments.

Foot & Ankle Orthopaedics, 2(3)
DOI: 10.1177/2473011417S000373
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