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Title **Autologous Chondrocyte Implant (ACI). A Systematic Review**

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Aim

To assess the efficacy, safety, and costs of autologous chondrocyte implants (ACI) and matrix-induced ACI (MACI) in treating knee and ankle chondral lesions.

Conclusions and results

ACI has yet to be proven more effective than other procedures for knee osteochondral lesions. In the short term (2-3 years), ACI and MACI patients' knee conditions improve. ACI is a safe procedure. Nevertheless, the new variant (MACI) could be safer since it presents fewer hypertrophy-related adverse events.

Two independent investigators used previously established criteria in selecting 24 articles (3 clinical trials, 2 cohort studies, 15 case series studies, 3 systematic reviews, and 1 economic evaluation). Two clinical trials compare ACI with its variant MACI, and the third trial compares ACI with mosaicplasty. One cohort study evaluates ACI against debridement, while the other assesses different ways of implementing ACI. One study was related to the ankle joint, and another one was an economic evaluation, although a systematic review also includes an economic model.

Recommendations

The effectiveness of ACI and MACI has yet to be proven through randomized clinical trials addressing both knee and ankle joints. Patients with associated joint diseases need to have undergone correction of those in conjunction with ACI.

Methods

MEDLINE, EMBASE, ISI WoK, HTA, DARE, NHS EED, Cochrane Library, and other databases were used in a systematic review of the literature. Two independent researchers selected and reviewed the papers according to previously established selection criteria, and the information was synthesized in evidence tables.

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