Significant Improvement of Knee Function (KOOS/Lysholm) and Pain VAS Score

Both cartilage repair methods resulted in significant improvement of average KOOS and Lysholm scores as well as a significant reduction in pain VAS at 1- and 2-year follow-up, when compared to baseline values.

Despite a larger mean defect size and more patients with K-L grade ≥ 2 in the AMIC® group, at 1 and 2 years, this group showed a higher mean improvement in all clinical scores compared to the ACI-C group (see graphs below).
Patients with previous microfracture surgery to the study knee exhibited a lower improvement of mean total KOOS, but this difference was not significant.

At 2 years, there were 3 clinical failures with KOOS deterioration in both groups. In addition, 2 patients in the AMIC® group were classified as “hard failures” with progression to a total knee replacement (both patients with a K-L score of 2 at baseline) while there were none in the ACI-C group.

Conclusions

These good results at 2 years after AMIC® repair were achieved in relatively large, degenerative lesions (mean defect size of 5.2 cm²).

The clinical outcomes showed no significant difference in improvement when comparing the ACI-C and AMIC® group at 2 years, which may be due to the small number of patients in each group resulting in a low power of the study.

Cell source (bone marrow stem cells or expanded autologous chondrocytes) did not appear to affect the results of this study.

The authors concluded that if the results of the study can be confirmed after 5- and 10-year follow-up, AMIC® could be considered an equal alternative to techniques based on chondrocyte transplantation for treatment of knee cartilage defects.

Furthermore, if comparable long-term results are obtained, AMIC® as a one-step procedure would be preferable to the more complex, two-stage ACI-C procedure.

For details of the study refer to the original article: