

Treatment Of Knee Osteoarthritis And Chondral Injury With Umbilical Cord/Wharton Jelly Derived Mesenchymal Stem Cell: A Systematic Review On Safety And Efficacy

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INTRODUCTION:

Knee osteoarthritis (OA) is a major cause of pain and a leading cause of disability. Mesenchymal stem cells (MSCs) have garnered attention for the treatment of knee OA due to their regenerative potentials. This study aims to review clinical trials involving human umbilical cord (hUC)-MSCs injection into the knee joint for treating OA.

METHODS:

The EBSCOhost and PUBMED databases were searched for eligible studies from inception to December 2023 based on PRISMA guidelines.

RESULTS:

A total of 6 studies met the inclusion criteria, including 97 patients with 134 knees who received hUC-MSC injections. The follow up period ranges from 3 months to 48 months. No serious adverse effects were recorded. All studies consistently demonstrate statistically significant functional improvement.

Clinical Trial	Functional Outcome with p value
Samara et al	KOOS: p=0.0001
Matas et al	1)WOMAC: p=0.04 2)VAS score: p=0.02 3)SF-36: not statistically significant 4)OMERACT-OARSI: p= 0.08
Soltani et al	1)VAS: p=0.401 2)ROM: p=0.044 (2 nd and 24 th weeks) 3)KOOS: p=0.05 (until 8 weeks)
Dilogo et al	1)VAS: not statistically

significant

2)IKDC: (6th months): mild OA: p=0.001, severe OA: p=0.008.

12th month: (mild OA): p=0.038, (severe OA): p=0.28
3)WOMAC: (mild OA): p=0.038, (severe OA): p=0.044

Gunay et al

1)VAS: p=0.0001

2)WOMAC: p=0.007

3)Lequesne: p=0.239

4)SF-36: p=0.032

Ao et al

1)VAS score: 6.0 to 3.5,

2)WOMAC: 26.0 to 8.5

3)SF-12: 39.0 to 46.0

(data represent as median (interquartile range)

Post injection MRI shows variable mixed improvement in terms of WORMS, MOCART score, and cartilage thickness.

CONCLUSION:

Patients with knee OA treated with intra articular injections of hUC-MSC show improved pain and functional outcomes with no side effect; with multiple injections of hUC-MSC show better outcomes compared to the single injection technique.

REFERENCES:

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