INPLASY PROTOCOL

Corresponding author:
Rong Hui Xie

xieronghui1987@sina.com

Author Affiliation:
Jiujiang First People's Hospital

Support: None.

Review Stage at time of this submission: Preliminary searches.

Conflicts of interest: None declared.

Effect of stem cell transplantation on the outcome of patients with osteoarthritis of the knee: a systematic review and meta-analysis

Xie, RH[1]; Gong, SG[2]; Wang, JX[3].

Review question / Objective: The efficacy of stem cell transplantation for knee osteoarthritis has been controversial, and there are many varieties of stem cells. The objective is to find an effective treatment plan of stem cell transplantation, improve the treatment effect of patients, effectively relieve the disease and restore knee function. Participants: Patients with osteoarthritis of the knee Intervention/Comparison: To treat knee osteoarthritis patient with stem cell transplantation / To treat knee osteoarthritis patient without stem cell transplantation Outcome: Treatment effectStudy design: Randomized controlled trial or cohort study.

Condition being studied: For patients with knee osteoarthritis (OA), there are a variety of treatments to reduce pain and dysfunction. Much of the latest research has focused on stem cell therapy. The safety and efficacy of stem cells derived from multiple sources, such as mesenchymal stem cells, adipose stem cells, and umbilical cord mesenchymal stem cells, in the treatment of knee osteoarthritis have not been rigorously demonstrated. The efficacy and cartilage repair ability of stem cell therapy for knee osteoarthritis need to be systematically evaluated.

INTRODUCTION

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METHODS

Search strategy: The terms included "Osteoarthritis, Knee"OR "Knee Osteoarthritides" OR "Knee Osteoarthritis" OR "Osteoarthritis of Knee" OR "Osteoarthritis of the Knee"AND "Stem Cell Transplantations" OR "Transplantations, Stem Cell" OR "Transplantation, Stem Cell" OR "Stem CellTransplantation".

Participant or population: Patients with osteoarthritis of the knee.

Intervention: To treat knee osteoarthritis patient with stem cell transplantation.

Comparator: To treat knee osteoarthritis patient without stem cell transplantation.

Study designs to be included: Randomized controlled trial or cohort study.

Eligibility criteria: Eligible studies had the following criteria :(1) randomized controlled trials or cohort studies, (2) limited to human studies, (3) including information on treatment outcomes, and (4) also describing prognostic details and comparing characteristics of patients with and without stem cell therapy. If the following studies were excluded :(1) animal and cell experiments, (2) no or insufficient reported data, (3) reviews, case reports, evaluations, editorials, and letters, and (4) duplicate experiments.

Information sources: The electronic databases of Cochrane,Embase, Ovid Medline, Proquest, PubMed, Scopus, Web of science and as well as Chinese databases including China National Knowledge Internet (CNKI) and SinoMed.

Main outcome(s): Treatment effect, ability to repair.

Data management: EndNote.

Quality assessment / Risk of bias analysis: The methodologic quality of primary manuscripts was evaluated separately by two reviewers, according to the Newcastle-Ottawa-Scale, which is used for quality assessment of cohort studies and case–control studies. Studies scoring six or more were considered to be with high quality. Any disparities between investigators were addressed by discussion.

Strategy of data synthesis: The Stata statistical software was used for the metaanalysis. Effect of the amount less than 1.00 and P value less than 0.05 meant statistical significance. The heterogeneity among primary studies was evaluated by using the Q test. The random effect model, which was admitted to be more conservative, was chosen if significant heterogeneity was observed. Otherwise, the fixed-effect model was used.

Subgroup analysis: Subgroup studies were conducted according to stem cells from multiple sources.

Sensitivity analysis: After deleting any one of the papers, the combined results of the remaining papers are not different from those without deletion, which means that the sensitivity analysis has been passed.

Country(ies) involved: China.

Contributions of each author:
Author 1 - Rong Hui Xie.
Email: xieronghui1987@sina.com
Author 2 - Shi Guo Gong.
Author 3 - Jian Xiang Wang.