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Intra-articular injection of stem cells in patients with knee osteoarthritis: A systematic review of the literature

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Introduction & Aim: Stem cell treatment for knee osteoarthritis is emerging as a new treatment modality and we aimed to review its effect.

Methods: Published and non-published, (non-) randomized controlled trials were searched in various databases and trial registers. Risk of bias appraisal was performed using the Cochrane Risk of Bias Tool. Levels of evidence according to the Oxford Centre for Evidence Based Medicine were used to express the strength of evidence. A descriptive synthesis was performed as meta-analysis was not possible.

Results: Six trials with a total of 155 stem cell treated patients were found. All trials were deemed to be at high risk of bias and they were graded down to a Level 3-4 of evidence. Autologous adipose derived mesenchymal stem cells, autologous and allogenic bone marrow derived mesenchymal stem cells and autologous peripheral blood stem cells were used. Concomitant surgery was performed in all but one trial. Due to clinical heterogeneity, no meta-analysis was possible. Five out of six trials found favorable results for functional, radiological or histological outcomes compared to controls. No serious adverse events were reported.

Conclusion: Studies investigating the effect of stem cell therapy for patients with knee osteoarthritis show a trend in favor of stem cell therapy (level 3-4 of evidence). However, due to a high risk of bias we deem that there is no proven efficacy for stem cell therapy in patients with knee osteoarthritis. Therefore, we do not recommend its use in practice yet.

Biography

Haiko Pas was graduated from Leiden University Medical Centre. He is currently working as a Senior House Officer for the Department of Pulmonology, Spaarne Gasthuis Haarlem. He has previously worked in the Department of Cardiology, Alrijne Hospital Leiden. He has also worked as a Researcher for the Sports Physician group, Onze Lieve Vrouw Gasthuis location West, Amsterdam.

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