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Stem cells in spinal fusion

Vivek P Shah

Northwestern University, USA

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There are a number of bone regeneration therapeutics available to aid spinal fusion, however, many are associated with pseudarthrosis, inflammation and other complications. The use of mesenchymal stem cells for fusion has been promoted to mitigate these risks yet achieve successful bony fusion. This paper sought to review the clinical studies available to date with use in spinal fusion. The preliminary results from these studies demonstrate that stem cells can provide high rates of fusion that are comparable to autograft without associated morbidity. Both autologous and allogeneic stem cell sources showed similar rates of fusion in this review. However, further research is required to evaluate which clinical situations is the optimum for stem cell use.

Publications

1. 124. 3D-printed hyperelastic bone® composite scaffolds as bone graft substitutes
2. Stem Cells and Spinal Fusion
3. P13. Effect of intraoperative steroid treatment on spinal fusion capacity in rat spinal arthrodesis model
4. 105. Sex-based differential response in rhBMP-2-mediated spinal fusion in vivo

Biography

Vivek S has completed his BS at the age of 22 years from Saint Louis University, USA. He is currently getting his Masters in Physiology from the University of Louisville, USA. He will then begin medical school at the University of Kentucky, USA to receive his M.D. He has overworked at a translational research lab in the orthopedic department of Northwestern University where he has completed publications and worked on many large-scale research projects that are in the process of being published.

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