Figure 2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Authors**  | **Animal**  | **Sources of Stem Cells**  | **Method of delivery**  | **Method of analysis**  | **Significant findings**  |
| Murphy, Fink, Hunziker . and Barry30 | Caprine | Bone Marrow  | 1 direct IA injection Scaffold-free  | Histochemical analyse 6- and 20-weeks post-injection | 6 weeks = less reduction of articular cartilage matrix staining, fewer osteophytes present, less subchondral bone plat thickening and reduced loss of cartilage structure to subchondral bone in cell treated group compared to control group. 20 weeks = both control and treated had significant OA lesions, evidence of repair tissue in 7 of 9 treated joints.  |
| Toghraie *et al*31 | Rabbit  | Infrapatellar Fat Pad  | As above  | X rays at 12, 16 and 20 weeks  | 12 weeks = all knees have signs of OA16 weeks = cell treated have same or reduced OA score, control group have increased OA score 20 weeks = decrease OA score in 4/5 cell treated and increased OA score in 4/5 control group  |
| Histological evaluation 16 and 20 weeks  | 16 weeks = no significant difference between cell treated and control 20 weeks = cell treated had reduction in severity of lesions whereas control had continued worsening of lesions  |
| Shah *et al*32 | Canine | Adipose tissue  | 1 direct IA injectionScaffold-free | Physical examination and QOL\* 10 weeks post-injection | 10 weeks = significant improvement in pain reduction, improvement of mobility, and increased daily activity as measured as quality of life score12% exhibit no changes |
| Black *et al*33 | Canine  | Paralumbar subcutaneous adipose tissue | As above  | Physical examination 90 days and 180 day post-injection | 90 days = significant improvement in clinical score of lameness at walk, in lameness at trot, in pain on manipulation, range of motion and functional disability when compared to baseline180 days = significant improvement was detected for lameness at trot and range of motion. No significant improvement for lameness at walk, pain on manipulation and functional disability when compared to baseline  |
| Mariñas -Pardo *et al*34 | Horse | Intraperitoneal or subcutaneous adipose tissue  | 3 direct IA injection Scaffold-free | Physical examination 90 days post-injection  | 90 days = significant reduction in lameness grade and decreased need for local and/ore systemic anti-inflammatory therapies.  |
| Delling *et al*35 | Ovine  | Bone Marrow  | As above | MRI at 1, 4, 8 and 12 weeks post-injection. Post-mortem evolution at 12 week | Significant deceleration of OA progression in treated group No significant difference in the degree of OA detected between control group and treated group |

**Animal Model Studies**

Summary of animal model studies and their results, on the use of stem cells to treat osteoarthritis. Significant = statistically significant. \*(quality of life)