**Supplementary**

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| Reference  | Source  | Model  | Main findings |
| Endothelial Dysfunction |
| Salvolini et al [1] | Human skin-MSC | In vitro human aortic endothelial cells  | Skin-derived MSCs increased NO production |
| Lin et al [2] | Human BM-MSC  | 1. In vitro human umbilical vein endothelial cells 2. Intravenous delivery of allogeneic MSCs in atherosclerosis mice model | 1. MSCs prevent ox-LDL-mediated inhibition of eNOS activity through the phosphorylation and restoration of Akt/eNOS activity2. MSCs restored endothelium-dependant relaxation via an increase in phosphorylated Akt/eNOS via anti-interleukin-8 antibodies |
| Hyperlipidaemia |
| Frodermann V et al[3] | Mice BM-MSC | Intravenous delivery of MSCs in atherosclerosis mice model  | MSCs significantly reduced circulating cholesterol and lipoprotein lipase |
| Hong et al [4] | Human gingival-MSC  | Intravenous delivery of MSCs in ApoE−/− mice | MSCs decreased circulating total cholesterol and LDLs whilst increasing HDLs |
| Li et al [5] | Human umbilical cord-MSC | Intravenous delivery to leptin deficient mice  | Decreased circulating cholesterol via an increase in PPAR-α and reduction in fatty acid synthase |
| Inflammation |
| Nicola M Di et al[6] | Human BM-SC | In vitro human cell culture  | SCs suppress CD4+/CD8+ T cells; even without direct cell to cell contact  |
| Frodermann V et al[3] | Mice BM-MSC  | Pre-treatment with MSC in atherosclerosis mice model  | MSCs suppress CD3+ T cells via cell to cell contact |
| Frodermann V et al[3]  | Mice BM-MSC | Pre-treatment with MSC in atherosclerosis mice model | Initial 51% increase in Tregs and progression to 10% decrease from baseline |
| Wang ZX et al[7]  | Mice BM-MSC | MSC post-treatment in chronic atherosclerosis mice model | MSCs promote an anti-inflammatory environment. MSCs increase number and activity of CD4+CD25+FOXP3+ Treg subpopulation and decrease effector T cell populations  |
| Cahill EF et al[8]  | Mice BM-MSC | In vitro cell culture  | MSCs augment Treg induction via ligand Jagged-1 activation of Notch signalling  |
| Rashedi I et al[9]  | Human BM-MSC | In vitro human cell culture | MSCs augment Treg induction via TLR3 and 4 increasing Notch signalling  |
| Adutler-Lieber S et al [10] | A-MSC  | In vitro human cell culture | A-MSCs can polarise macrophages into anti-inflammatory phenotype |
| Li Q. et al[11]  | S-MSC  | MSC post-treatment in chronic atherosclerosis mice model  | S-MSCs decrease plaque size. S-MSCs promote a NFKB dependant anti-inflammatory cytokine profile  |
| Zhang X. et al[12]  | Human G-MSC  | MSC post-treatment in chronic atherosclerosis mice model and in vitro human macrophage culture  | G-MSCs decreased plaque area and spleen/blood/lymph node macrophage numbers. G-MSCs can polarise macrophages into anti-inflammatory phenotype  |
| Wang ZX et al[7]  | Mice BM-MSC | In vitro macrophages cultured with ox-LDL  | Decrease in foam cell formation by decrease in scavenger receptors: CD36 and SRA |
| Plaque Stability |
| Shi et al [13] | Human induced pluripotent stem cell-MSCs | Intravenous delivery of MSCs in ApoE−/− mice | Reduced size of atherosclerotic plaque |
| Wang et al [14] | Rabbit BM-MSCs | Intravenous delivery of MSCs into rabbit atherosclerosis model  | MSCs increased fibrous cap thickness, with increased vascular smooth muscle cell numbers and collagen content |
| Regeneration |
| Iwase et al [15] | Rat BM-MSCs | Intravenous delivery of MSCs into rat model of hind limb ischaemia  | MSCs differentiated into ELCs and VSMCs improving hind limb ischaemia  |
| Lu et al [16] | Human BM-MSCs | Intravenous delivery into diabetic patients with critical limb ischaemia  | MSCs improved healing time of ulcers via increased perfusion  |
| Wang et al [17] | Human BM-MSCs | Intravenous delivery of MSCs into model of vascular injury  | MSCs homed to site of injury and differentiated into ELCs, contributing to vascular reendothelializationMSCs can also contribute to intimal hyperplasia  |

Table 1: A table summarising the key studies cited in the review. MSC = Mesenchymal Stem Cell; A-MSCs = Adipose-derived mesenchymal stem cells; BM-MSCs= Bone marrow-derived MSCs; ELC = Endothelial-like cell; PPARα = Peroxisome proliferator-activated receptor-alpha.

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