

# Medical Update Memo

August 10, 2010

## Reciprocal Th1 and Th17 regulation by mesenchymal stem cells: Implication for multiple sclerosis

### Summary

Human mesenchymal stem cells (hMSCs) are being considered for clinical trials of multiple sclerosis (MS). The authors studied the effect of these stem cells in a specific subgroup of immune system cells. They found that soluble products from hMSCs inhibited the responses of some immune cells that are involved in the inflammatory process. Darlington PJ, Boivin MN, Renoux C, François M, Galipeau J, Freedman MS, Atkins HL, Cohen JA, Solchaga L, Bar-Or A. *Ann Neurol*. 2010 Jul 26.

### Details

Authors examined the effects of adult bone marrow-derived hMSCs on responses of primary human Th1, Th17, and Th1/17 double-expressing T-cell subsets, all implicated in MS.

As expected, soluble products from hMSCs inhibited Th1 responses; however, Th17 responses were increased. Secretion of interleukin (IL)-10, considered anti-inflammatory, was decreased. Pretreating hMSCs with the proinflammatory cytokine IL-1beta accentuated these effects, and caused decreases in the Th1/17 subset.

These findings underscore the importance of further preclinical work and immune-monitoring to define hMSC effects on disease-relevant immune responses under variable conditions.

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