

CSCI Reference Library

Ulcerative Colitis

1. Mesenchymal Stem Cell Therapy for Inflammatory Bowel Disease: A Systematic Review and Meta-analysis.

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Recent advances in inflammatory bowel disease (IBD) therapeutics include novel medical, surgical, and endoscopic treatments. Among these, stem cell therapy is still in its infancy, although multiple studies suggest that the immunomodulatory effect of stem cell therapy may reduce inflammation and tissue injury in patients with IBD. This review discusses the novel avenue of stem cell therapy and its potential role in the management of ulcerative colitis and Crohn's disease. We conducted a comprehensive literature search to identify studies examining the role of stem cell therapy (without conditioning and immunomodulatory regimens) in IBD. Taken together, these studies suggest a promising role for stem cell therapy in IBD although the substantial challenges, such as cost and inadequate/incomplete characterization of effect, limit their current use in clinical practice.

2. Intravenous vs intraperitoneal mesenchymal stem cells administration: What is the best route for treating experimental colitis?

Fabiany da Costa Goncalves, Natalia Schneider, Fernanda Otesbelgue Pinto, Fabiola Schons Meyer, Fernanda Visioli, Bianca Pfaffenseller, Patricia Luciana da Costa Lopez, Eduardo Pandolfi Passos, Elizabeth Obino Cirne-Lima, Luise Meurer, Ana Helena Paz.

World Journal of Gastroenterology, Volume 20, Issue 48, December 2014

Several studies demonstrate the ability of mesenchymal stem cells (MSCs) to preferentially migrate to sites of injury when infused in animal models. After receiving appropriate signals during tissue inflammation, MSCs can migrate to affected sites where they assist in recovery, displaying high therapeutic potential with regards to tissue repair and/or the control of local inflammation. The expression of growth factors, cytokines and extracellular matrix receptors by MSCs may drive the process. These cells have great therapeutic potential in regenerative medicine due to their capacity for differentiation *in vitro* as well as their secretion of many bioactive molecules. Still, little is known regarding the optimal delivery strategy for MSCs to treat inflammatory bowel disease (IBD), which includes ulcerative colitis (UC) and Crohn's disease (CD). The present study compared intravenous and intraperitoneal routes of administration for MSC in the treatment of UC to clarify the best cell therapeutic methodology to enhance the success of UC treatment.