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THE USE OF MULTI-POTENT MESENCHYMAL STROMAL CELLS FOR CONTROL OF INFLAMMATORY BOWEL DISEASE

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Despite availability of a large variety of anti-inflammatory agents with broad spectrum of reactivity against autoimmune and non-specific inflammation, disease activity cannot always be adequately controlled and some approved conventional agents can result in severe, potentially life-threatening complications. Safer and more effective control of inflammatory bowel disease (IBD) including Crohn's disease and ulcerative colitis remain unmet need. In recent years, a new cell-mediated procedure induced by multi-potent mesenchymal stromal cells (MSCs) is emerging as a potential safer and more effective modality for control of inflammatory reaction in IBD with additional potential benefit - repair of existing tissue damage. Autologous MSCs can be obtained from the bone marrow by aspiration, from the fat tissue by liposuction, or using unrelated MSCs derived from placenta & cord tissue. The number of MSCs can be easily expanded in culture using no growth factors. MSCs attracted spontaneously to sites of inflammation and tissue damage and can turn off any inflammation or anti-self reactivity resulting from an autoimmune disease. Furthermore, MSCs can be differentiated into cells resembling nearly every tissue and as such may also repair existing tissue damage and prevent fibrosis. Systemic or even intrathecal treatment of MSCs is safe based on our experience in more than 500 patients treated for different indications, mostly neuroinflammatory and neurodegenerative disorders and a few with IBD. The exquisite anti-inflammatory effects inducible by MSCs are best documented by control of otherwise resistant graft-vs-host disease following allogeneic stem cell transplantation, considered the most potent, not infrequently fatal, inflammatory reaction. Based on our cumulative experience, using MSCs is likely to become the treatment of choice for patients with resistant IBD, especially Chron's disease, and later on also for patients at an early stage of their disease in order to avoid deterioration of damage to the gastro-intestinal tract, while avoiding hazardous non-specific anti-inflammatory agents

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