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PO-109 - (23983) - MESENCHYMAL STEM CELLS MITIGATE INFLAMMATORY BOWEL DISEASE BY SUPPRESSION OF INFLAMMATION AND OXIDATIVE STRESS

I. Song (Korea, Republic of)[1]

1 - Yeungnam University

INHWAN SONG
Daegu

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Inflammatory bowel disease (IBD) is an autoimmune disease characterized by chronic inflammation mainly in the large intestine. The interleukin-10 knockout (IL-10 KO) mouse is a well-known animal model of IBD that develops spontaneous intestinal inflammation resembling Crohn's disease. Oxidative stress is considered to be the leading cause of cell and tissue damage. Reactive oxygen species (ROS) can cause direct cell injury and/or indirect cell injury by inducing the secretion of cytokines from damaged cells. This study evaluated the effects of mesenchymal stem cell (MSC) on the progression of IBD.
In this study, human bone marrow-derived MSCs were injected into IL-10 KO mice (MSC). Oxidative stress and inflammation levels were evaluated in the large intestine and compared with those in control IL-10 KO mice (CON) and normal wild-type control mice (Wild).
The levels of ROS (superoxide and hydrogen peroxidase) and a secondary end-product of lipid peroxidation (malondialdehyde) were considerably higher in the CON, while superoxide dismutase and catalase levels were lower in the MSC. Inflammation-related marker (interferon-γ, tumor necrosis factor-α, IL-4, and CD8) expression and inflammatory histological changes were much less pronounced in MSC than in CON.
MSCs affect the redox balance, leading to the suppression of IBD.

Palavras-chave : Mesenchymal stem cell, Inflammatory bowel disease, Inflammation