

Cytokine expression in placenta-derived mesenchymal stem cells in patients with preeclampsia and normal pregnancies

Jong Ha Hwang¹, Min Jeong Oh¹, Oye Sun Seok², Yu Chin Paek¹, Geum Joon Cho¹,
Soon Cheol Hong¹, Jae Kwan Lee¹, Hai Joong Kim¹

¹Department of Obstetrics and Gynecology, ²Women's Cancer Center Research Institute,
College of Medicine, Korea University

Objectives (목적)

The aim of this study was to investigate the levels of cytokines in placenta-derived mesenchymal stem cells (MSCs) in normal pregnancies and those with pre-eclampsia.

Methods (연구 방법)

C5a, CD40 Ligand, G-CSF, GM-CSF, GRO α , I-309, sICAM-1, IFN- γ , IL-1 α , IL-1 β , IL-1ra, IL-2, IL-4, IL-5, IL-6, IL-8, IL-10, IL-12p70, IL-13, IL-16, IL-17, IL-17E, IL-23, IL-27, IL-32 α , IP-10, I-TAC, MCP-1, MIF, MIP-1 α , MIP-1 β , Serpin E1, RANTES, SDF-1, TNF α , and sTREM-1 were measured in mesenchymal stem cells using the human cytokine array panel A. The sICAM-1 (intracellular adhesion molecule-1), stromal derived factor-1 (SDF-1) and monocyte chemotactic protein-1 (MCP-1) were measured by real time PCR and confirmed by Western blot analysis.

Results (결과)

MSCs derived from the decidua of normal pregnancies had significantly elevated levels of sICAM ($p=0.000$) and SDF-1 ($p=0.011$), compared to the pregnancies with pre-eclampsia. The level of MCP-1 in the decidua-derived MSCs was not significantly different. No significant difference was observed between normal and pre-eclamptic pregnancies for the amnion-derived MSCs.

Conclusions (결론)

The decreased levels of sICAM and SDF-1 found in the decidua-derived MSCs from pre-eclamptic pregnancies might be associated with some of the immunological alterations in pre-eclampsia.