The Effect of Interferon Beta in HLA-G Expression on Monocyte in Diabetes Type1

Abstract

Background and objectives: Dendritic Cells are the most important of antigen presenting cells with an effective role in immune tolerance. This study, aims to clarify the role of IFN-β in induction on dendritic cells derived by monocyte in diabetes type1 to evaluate the T cells response to beta cell specific antigenic molecule.

Material and Methods: In this research, peripheral blood mononuclear cells were isolated by phiCole and then dendritic cells generated from blood monocytes in Seven days, by adding granulocyte-monocyte colony stimulating factor and interleukin-4 with or without IFN-beta. MRNA was extracted by dendritic cells and cDNA was produced by reverse transcriptase enzyme. Then, Specific polymerase chain reaction for HLA-G was performed. In addition, T cell proliferation with a mixed Leukocytic reaction evaluated between dendritic cell and T by means of MTT.

Results: based on the results, IFN-β induces HLA-G molecule on dendritic cells. In addition, T cell proliferation responses in mixed leukocyte culture show significance difference between Case and control p<0.05. T cell proliferation was inhibited in their co-culture system affected by IFN-β

Conclusion: In this study, we show that dendritic cells-treated IFN-β with expression of HLA-G molecule inhibited T cell proliferation and so, our results suggest that some of the IFN- β regulatory effects with expression of HLA-G can probably prevent from beta cell destruction.

Key words: dendritic cells, Interferon Beta, Human leukocytic Antigen-G.

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