The expressions of CD200 and CD200R molecules on myeloid and lymphoid dendritic cells in pre-eclampsia and normal pregnancy

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Objective

The purpose of our study was to test the hypothesis that the expressions of CD200 and CD200R tolerance molecules are increased on peripheral blood DCs in normal pregnancy and decreased on peripheral blood DCs in pre-eclampsia.

Methods

Thirty three patients with pre-eclampsia, 38 normal pregnant women and 10 healthy non pregnant women were included in the study. Dendritic cells were isolated from peripheral blood, stained with monoclonal antibodies against blood dendritic cell antigens as well as CD200 and CD200R antigens and estimated using flow cytometry.

Results

The expressions of CD200 and CD200R molecules on CD1c+ myeloid and BDCA-2+ lymphoid DCs in the first trimester of normal pregnancy were significantly higher compared to the luteal phase of the ovarian cycle. The expressions of CD200 molecule on CD1c+ myeloid DCs were significantly lower in the third trimester of normal pregnancy compared to the second trimester. The expressions of CD200R molecule on CD1c+ myeloid DCs and BDCA-2+ lymphoid DCs did not differ in pre-eclampsia and healthy third trimester pregnant women. However, the expressions of CD200 molecule on CD1c+ myeloid and BDCA-2+ lymphoid DCs were significantly higher in pre-eclampsia when compared to the healthy third trimester pregnant women.

Conclusion

The results suggest increased tolerogenic properties of myeloid and lymphoid DCs in normal human pregnancy. Moreover, they suggest a decrease in tolerogenic properties of DCs before delivery. It seems possible that higher expressions of CD200 molecule on CD1c+ myeloid and BDCA-2+ lymphoid DCs in pre-eclampsia may constitute the tolerogenic mechanism secondary to the proinflammatory response which is observed in this syndrome.