The expressions of B7-H1 and B7-H4 co-stimulatory molecules on dendritic cells in pre-eclampsia

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Objective

To estimate the expressions of B7-H1 and B7-H4 molecules on myeloid and plasmocytoid dendritic cells (DCs) in peripheral blood of patients with pre-eclampsia, normal pregnant women and healthy non-pregnant women.

Methods

Thirty three patients with pre-eclampsia, 26 normal pregnant women and 12 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 and B7-H1 and B7-H4 molecules and estimated using flow cytometry.

Results

The expressions of B7-H1 and B7-H4 molecules were significantly higher on CD1c+ myeloid and BDCA-2+ plasmocytoid DCs in the first trimester of pregnancy when compared to the luteal phase of the ovarian cycle. Moreover, the expressions of B7-H1 molecule on CD1c+ DCs in the second trimester of normal pregnancy were significantly higher when compared to the first trimester. In the third trimester they decreased when compared to the second trimester. The expressions of B7-H1 molecule on CD1c+ myeloid and BDCA-2+ plasmocytoid DCs were significantly lower in pre-eclampsia when compared to healthy third trimester pregnant women.

Conclusion

It seems that the higher expressions of B7-H1 and B7-H4 molecules on CD1c+ myeloid and BDCA-2+ plasmocytoid DCs in the first trimester of pregnancy suggest their role in the immunomodulation during early pregnancy. Lower expressions of B7-H1 molecule on myeloid CD1c+ DCs in the third trimester of normal pregnancy may suggest their decreased tolerogenic activities before the labour. It seems possible that the lower expressions of B7-H1 tolerance molecule on CD1c+ myeloid and BDCA-2+ plasmocytoid DCs in pre-eclampsia may be associated with the increased inflammatory response which is observed in this syndrome.