Korean Journal of Fetal Medicine
Vol. 5 No. 2 June 2009

D6 decoy receptor in preeclampsia

Geum Joon Cho[1], Min-Jeong Oh[1], Hyun-Joo Seol[2], Hyun Chul Jeong[1], Young Sun Yoon[1], Yu-Chin Paek[1], Soon-Cheol Hong[1], Hai-Joong Kim[1]

[1]Department of Obstetrics and Gynecology, College of Medicine, Korea University,
[2]Department of Obstetrics and Gynecology, College of Medicine, Kyunghee University

Objectives (목적)

Chemokines play a major role in the induction of inflammatory reactions and development of an appropriate immune response by coordinating leukocyte recruitment. D6 is a promiscuous decoy receptor defined as non-signalling receptor that can bind to the chemokines and target them to degradation resulting in inhibition of inflammation. In placenta, D6 is strongly expressed by invading extravillous trophoblast and on the apical side of syncytiotrophoblast cells, at the very interface between maternal blood and fetus. It has been reported that exposure of D6-/- mice to LPS resulted in increased levels of inflammatory chemokines and increased leukocyte infiltrate in placenta causing an increased rate of fetal loss. Preeclampsia is associated with a more vigorous systemic inflammatory response than normal pregnancy. The purpose of this study was to investigate the expression of D6 decoy receptor in placentas from preeclamptic pregnancies and normal placentas.

Methods (연구 방법)

A study was carried out in 35 pregnant women (7 patients with mild pre-eclampsia, 16 patients with severe pre-eclampsia and 12 healthy normotensive pregnant women) during the third trimester of pregnancy. The expression of D6 mRNA and protein was determined with real time RT-PCR and Western blotting, respectively.

Results (결과)

The mRNA and protein expression of D6 decoy receptor were detected in all of placentas from preeclamptic pregnancies and normal placentas. Placental D6 mRNA expression was significantly lower in preeclampsia than in normal pregnancy. Western blot analysis revealed a decreased protein expression in preeclampsia.

Conclusions (결론)

The expression of D6 decoy receptor in preeclamptic placenta was significantly lower than that of normal pregnancy. Decreased expression of D6 decoy receptor may involve an exaggeration of systemic inflammation in preeclampsia. Thus, D6 decoy receptor in placenta might play an important role in the pathogenesis of preeclampsia.