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The change of glutathione content in placenta of patients with pregnancy-induced hypertention

Sei Jun Han, M.D., Wang Soo Kim, M.D.

Dept of Obstetrics and Gynecology, College of Medicine, Chosun University, Kwang-Ju, Korea

Glutathione has a key role in serveral detoxification reactions and in the protection against injury caused by reactive oxygens. Pregnancy-induced hypertention(PIH) is associated with endothelial cell dysfunction. Such dysfunction could be caused by oxidatvive stress. There is evidence of increased activity of free radicals in PIH, but little is known about the part played by changes in specific antioxidants.

In this study, the changes of glutathione levels were investigated in blood of patients with PIH, and Cord blood of these patients was also investigated.

The glutathione levels in cord blood of neonates from hypertensive pregnant women was significantly higher than in cord blood from normotensive pregnant women. The changes of γ-glutamylcysteine synthetase, and of glutathione s-transferase in placenta were not significant. But γ-glutamyl transpeptidase activity increased significantly in placenta of hypertensive pregnant women.

These results suggest that the increased glutathione in cord blood of patients with PIH may be due to increased glutathione interorgan transport resulting from increased activity of placenta γ-glutamyl transpeptidase.

I S—34 **Prenatal diagnosis of the fetal RhD blood type using a single fetal nucleated erythrocyte in maternal blood**

Showa University, National Center of Neurology and Psychiatry Kohnodai Hospital*
Akira Watanabe, Akihiko Sekizawa, Takehiko Kimura*, Hirosi Chiba, Hirosi Saito, Takumi Yanaihara

Objective: To develop a method for prenatal diagnosis of the fetal RhD blood type from maternal blood, a single nucleated erythrocyte (NRBC) was isolated from RhD-negative maternal blood, and DNA analysis was performed.

Methods: Maternal blood was obtained at 8-31 weeks of gestation, and NRBCs were separated with Percoll using a discontinuous density gradient method. NRBC was collected individually by micromanipulator under microscopic observation. After whole genome amplification with primer extension pre-amplification (PEP), exon 7 of RhD and RhCE as well as the ZFX/ZFY loci were amplified by nested polymerase chain reaction (PCR). PCR products were electrophoresed on agarose gel.

Results: Nucleated erythrocytes were detected in 9 of 10 maternal blood samples. RhD genotype was successfully analyzed in 12 of 13 NRBCs, in which sex of a fetus could be determined. The results of RhD blood type and sex in NRBCs obtained from maternal blood were identical with those of newborns.

Conclusions: A single NRBC analysis for RhD prenatal diagnosis was firstly demonstrated. This method provides extremely useful information for the management of the Rh-negative pregnant women. Furthermore, the method can be applied to other genetic disorders, and is expected to become the preferred method of non-invasive prenatal diagnosis of DNA.