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Authors: Iu. A. Sukhanova, E.A. Sebentsova, D.D. Khukhareva, D.M. Manchenko, N. Yu. Glazova, P.A. Vishnyakova, L.S. Inozemtseva, O.V. Dolotov, M.Y. Vysokikh, N.G. Levitskaya

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Gender-dependent changes in physical development, BDNF content and GSH redox system in a model of acute neonatal hypoxia in rats

Iu.A. Sukhanova[a,c], E.A. Sebentsova[b], D.D. Khukhareva[a], D.M. Manchenko[a], N.Yu. Glazova[b], P.A.Vishnyakova[c], L.S. Inozemtseva[b], O.V. Dolotov[b], M.Y. Vysokikh[c], N.G. Levitskaya[a,b]

[a]Lomonosov Moscow State University, Biology faculty, Moscow, Russia.
[b]Institute of Molecular Genetics, Russian Academy of Science, Moscow, Russia.
[c]Federal State Budget Institution 'Research Centre for Obstetrics Gynaecology and Perinatology' Ministry of Healthcare and Social Development of the Russian Federation, Moscow, Russia.

Highlights:

- Acute neonatal hypoxia led to a gender-dependent upregulation of HIF1-α, GPx4 and BDNF mRNA expression level in the brain.
- Disturbance in the glutathione antioxidant system was revealed after acute neonatal hypoxia in blood and brain.
- Acute neonatal hypoxia induced a gender-dependent increase of BDNF protein level in the brain.
- A delay in physical and sensorimotor development of rat pups was observed in a gender-dependent manner.
- The model of acute neonatal hypoxia could be used as a milder model for hypoxic brain damage in extremely preterm infants.