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Effects of neonatal hypoxia on mice behavior and oxidative stress parameters

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Background

Approximately 2,9-9,0 of 1000 infants experience some degree of perinatal ischemic-anoxic or prolonged anoxic insult [1].

Materials and methods

Seven days old male Swiss mice were distributed on three groups: hypoxia (H), maternal separation (MS) and no handling (NH). H group underwent to 10% oxygen during 6 hours/day for 6 days and MS group was maintained in normoxia, but separated from their dams such as H group. When mice completed 3 months old, they were tested on locomotor activity boxes or in plus-maze. The parameters measured were erythrocyte catalase, superoxide dismutase and glutathione peroxidase (GPx) and cerebral catalase. Data were analyzed by one-way ANOVA test and Bonferroni post-hoc test, when appropriated.

Results

On the activity boxes, during the 5 first minutes, it was observed a significant decrease of vertical movements on H group, when compared to other groups. However, after 30 minutes, the groups didn't differ. Besides, H mice demonstrated a diverse emotionality on plus-maze, once the quantity of fecal boli and urine was significant different from group NH. Considering oxidative stress, only GPx values were increased on H group compared to MS group.

Conclusions

Neonatal hypoxia is capable of generating long-term alterations on mice behavior and on production and/or activation of some antioxidant enzymes.

References

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