aEEG was continuously monitored and the level of encephalopathy assessed. Follow-up of cognitive, language and motor function according to Bayley III Scales (BSID) was carried out at 24 months of age.

Results: All 12 children with normal BSID normalized their aEEG background pattern within 48 hours. Adverse outcome, defined as cerebral palsy (CP)/frank neurological or cognitive abnormalities/death, was seen only among infants with persisting pathological aEEG at and beyond 24 hours. 5 children were lost to follow up.

Outcome	Number of children	Time to normalized aEEG
Normal BSID	12	~48 hours
Frank neurological/cognitive abnormalities	0	
CP	2	24 hours/48 hours
Ad mortem	2	Failure to normalize

[Table1.]

Conclusion: With the exception of 2 children, a normalization of aEEG within 48 hours was associated with good outcome at 24 months of age. The 2 children who developed CP showed a normalization of aEEG at 24 and 48 hours respectively. Further follow-up is necessary to fully evaluate cognitive functions.

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EFFECT OF SILDENAFIL ON VEGF EXPRESSION IN THE POSTNATAL MURINE BRAIN AFTER HYPOXEMIC INJURY

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Background: Sildenafil is a potent and selective inhibitor of cyclic guanosine monophosphate-specific phosphodiesterase type 5 that results in arterial vasodilation. Thus, sildenafil has been proposed as an alternative treatment of Persistent Pulmonary Hypertension of the Newborn. However, very little is known on the adverse effects of sildenafil, specifically on the CNS. Its administration enhances

functional recovery and increases neurogenesis and vasculogenesis in the adult rat after stroke. In the developing brain the effects of sildenafil remain unknown.

Objective: To determine the effect of sildenafil on vasculogenesis after hypoxic injury in a rat pup model.

Design/Methods: Sixteen male Wistar rat pups were randomly assigned at P10 to receive Sildenafil 5 mg/kg/day or sterile water three hours before being subjected to hypoxic conditions. All animal were exposed to FiO₂ of 10.4% for 10 minutes. On P25 animals were euthanized, brains removed fixed, and paraffin embedded. Immunohistochemistry using anti VEGF antibody was performed, VEGF positive cells were counted in 16 fields in three different slides for each animal. Results were expressed as mean± SD.

Results: All animals survived the experimental conditions. There was no significant difference in the number of VEGF- positive cells between control and sildenafil-treated pups (254 ±31 cells vs. 273 ± 26 cells, respectively)

Conclusions: In our animal model of hypoxic injury of the developing brain, sildenafil does not seem to have a significant effect on vasculogenesis as determined by VEGF expression. Further assessment of vasculogenesis by other methods and /or under different conditions is needed.

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INTER AND INTRAHEMISPHERIC EEG NONLINEAR SYNCHRONIZATION IN CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER

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Aims: To assess inter and intra EEG functional connectivity of children with Attention Deficit

Hyperactivity Disorder (ADHD) of mixed type through nonlinear EEG synchronization measures.

Methods: Signals: digitised monopolar EEGs (sampling rate: 256 Hz) from an ADHA group (12 males, 6-10 years) and a control (CONT) group (11 males, 6-10 years). Recording electrodes: Fp1/C3/T3/O1 (reference A2) and Fp2/C4/T4/O2 (reference A1). Pairwise interdependence between electrodes was assessed through a nonlinear index (L) for the assessment of generalized synchronization between the amplitudes of the signals. Also, properly generated surrogate data were used to test the significance of the interdependences. Intra cortical connectivity for the left and right hemisphere was obtained averaging all possible intrahemispheric pairs L values. Interhemispheric connectivity was computed averaging the homotopic hemisphere electrodes pairs L values. Conditions considered were: basal eyes-open and basal eyes-closed. ANOVA test for repeated measures and post-hot Bonferroni test was used for between-group comparisons.

Results: Intrahemispheric interdependences did not shown between-groups differences in any experimental conditions considered. Nevertheless, interhemispheric interdependence was greater ($P < 0.001$) for the ADHA group in both experimental conditions considered without significant differences between them.

Conclusions: ADHD children of mixed type show increased generalized nonlinear interhemispheric synchronization. Nonlinear EEG interhemispheric synchronization measures might be considered as clinical diagnostic help for ADHD children

showed reduction in brain weight and myelination. At postnatal day 7 (P7), in vivo 1H-MRS showed alterations of cerebral metabolism in cortex and hippocampus, suggesting impairment of brain structure, energy metabolism and neurotransmitter. Lactoferrin (Lf) an iron-binding glycoprotein secreted in milk with an antioxidant activity is transferred into the the brain after oral administration.

Aims: We hypothesized that Lf could influence brain development and prevent cerebral damages following prenatal exposure to glucocorticoids.

Methods: Rats were treated with DEX (100 µg/kg/day) during the third week of gestation with access to standard diet (Ctrl-DEX), or Lactoferrin-enriched diet (1 g/kg/day) during gestation and lactation (Lf-DEX). Sham rats not exposed to DEX fed with standard diet (Ctrl-Veh). In vivo 1H-MRSpectroscopy of hippocampus and cortex were acquired at P7 and compared using a Kruskal-Wallis test.

Results: Ctrl-DEX group showed decreased of NAA-NAAG in the hippocampus compared to Ctrl-Veh group ($2.55 \pm 0.26 \text{ mM}$ vs $3.37 \pm 0.10 \text{ mM}$, $p < 0.05$). A decrease of Glu-Gln was observed in both the hippocampus ($3.74 \pm 0.85 \text{ mM}$ vs $5.32 \pm 0.66 \text{ mM}$, $p < 0.05$) and the cortex ($2.95 \pm 0.66 \text{ mM}$ vs $5.62 \pm 0.78 \text{ mM}$, $p < 0.05$). No differences have been found between Lf-DEX group and both Ctrl-Veh and Ctrl-DEX groups.

Conclusions: Variation of NAA-NAAG and Glu-Gln, considered as markers of neuronal integrity and function, confirmed the altered brain development after Dex exposure and revealed the potential protective effect of the lactoferrin in a rat model of prenatal exposure to adverse conditions.

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LACTOFERRIN SUPPLEMENTATION PROTECTS BRAIN DEVELOPMENT IN RAT PUPS EXPOSED TO PRENATAL DEXAMETHASONE

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Background: In rats, in utero exposure to dexamethasone mimics gestational stress and

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EFFECT OF RESCUE AND PROPHYLAXIS WITH L-ARGININE ON APOPTOTIC CELL DEATH IN NEONATAL RATS

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Hypoxic ischemic brain damage presents significant mortality and morbidity rates in newborns. Various animal models of hypoxia-ischemia have made important contribution to the trial of pathogenesis