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DOES BILIRUBIN AFFECT THE ABCC1 (MRP1) EXPRESSION IN THE BRAIN PARENCHYMA OF THE GUNN RAT?

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Background: In infants severe unconjugated hyperbilirubinemia can produce brain bilirubin (UCB) accumulation leading to neurological damage (Kernicterus). ABCc1 (Mrp1), an ABC transporter family with high affinity for UCB protects neural cells from UCB toxicity *in vitro*.

Aim: To compare *in vivo* Mrp1 protein and gene expression in UCB damaged (cerebellum: Cll, striatum: St) and not damaged (cerebral cortex: Cx, hippocampus: Hip) regions of CNS in normal (JJ) and hyperbilirubinemic (jj) Gunn rats.

Methods: Quantitative Western blot and RT-qPCR were performed in Cll, St, Cx and Hip of JJ and jj rats 9 days after birth.

Results: In JJ animals, Mrp1 protein was similar in Cll, St and Hip; in Cx the expression was lower ($p < .05$). No difference was found in Mrp1 protein level in Cll and St in jj respect to JJ animals while a decrease ($p < .05$) was observed in the Hip. On the contrary, a significant increase ($p < .05$) of Mrp1 protein expression was detected in Cx of jj animals. At mRNA level, similar values were obtained in all tissues dissected from either JJ or jj animals with the exception of a decrease ($p < .05$) in Hip.

Conclusions: The lack of correlation between Mrp1 (protein and mRNA level) and UCB-related neurological damage suggests that *in vivo* this transporter is not a major player in UCB-induced neurological damage.

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EFFECT OF INTRAPARTUM OXYTOCIN ADMINISTRATION ON PRIMITIVE NEONATAL REFLEX

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Background and aims: The effect of the infusion of synthetic oxytocin (OT) on newborn behaviour has received little attention although there is a growing body of evidence that suggests it can affect the behaviour of non human mammals both early and in the long term. The impact of exogenous OT on primitive neonatal reflex has not been thoroughly investigated. The objective of the study is to evaluate the effect of OT used during induced labour on primitive neonatal reflex.

Methods: Observational descriptive study approved by Local Ethical Committee. 22 women with their first term pregnancies were studied. All had singleton, healthy pregnancies and epidural analgesia was used. Newborns were vaginal delivered and immediately placed in skin-to-skin contact (SSC) with the mother. Patients were excluded if no immediately SSC was applied (n=7), caesarean section was made after study inclusion (n=3) or newborn was admitted in NICU (n=1). 11 patients fulfilled inclusion criteria. 16 primitive neonatal reflexes in Biological Nurturing position were recorded during 20 minutes and evaluated by a blind observer. Patients were asked to sign a letter of consent. Newborn's reflexes were recorded at 34±13.4h of life.

Results: Mean GA and birthweight was 39±1.3w and 3339.7±252.2g respectively. Mean OT dose was 1749.8±1971.5 mUI. Mean neonatal reflexes observed were 85.2±8.8%. A negative correlation was found between the amount of OT infused during labour and the amount of neonatal reflexes observed ($r = -0.78$; $p < 0.01$).

Conclusions: Total dose of oxytocin infused during labour may affect primitive neonatal reflexes.