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PROLONGED PREMATURE RUPTURE OF MEMBRANES (PPRM) IS OFTEN ASSOCIATED WITH A GOOD LONG TERM PROGNOSIS

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Prolonged (>24 hours) premature rupture of the membranes (prior to onset of labour) is an obstetric risk at most gestations because of potential infection. When extremely prolonged and from very early gestations it may be associated with pulmonary hypoplasia and a high mortality(1). We wished to examine this risk in more detail.

Methods: We identified all babies born between July 1996 and June 2001 who had experienced rupture of membranes prior to 24 weeks gestation and for at least 14 days duration and obtained details of their clinical course. Long term outcome was provided by our neonatal follow up and local special needs register.

Results: 36 infants were identified. 21 survivors, median gestation 28 weeks (S.D. 2.96), birth weight median 1120g (S.D. 456g) and 15 had died, median gestation 25.85 weeks (S.D. 1.8), birth weight median 840g (S.D. 251g). The difference in mean gestations and weights are significant by T testing, p=0.009 and p=0.01 respectively. The median gestation of membrane rupture was 20.9 weeks (range 15.7–22.8) with an average interval until delivery of 51 days (range 15–107). Follow up data were available on 15/21 surviving infants. Although 5 infants went home on oxygen only two now require respiratory follow up. 13 have normal neurodevelopment and 1 is deaf. One child contiues with additional nutritional support.

Conclusion: These results suggest an improved outcome for these infants born following extremly PPRM in contrast with the literature. Clinicains can be more optimistic when counselling these women prior to delivery. 1. Xiao ZH, Andre P et al. Outcome of premature infants delivered after prolonged premtaure rupture of membranes before 25 weeks of gestation. Eur. J Obstet. Gynecol. Reprod. Biol. 2000;90:67–71

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CANNABINOIDS PROTECT AGAINST EXCITOTOXIC BRAIN LESIONS IN NEWBORN MICE

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Background: Exogenous and endogenous cannabinoids [CBs] exert neuroprotective and anti inflammatory actions on glia and neurons. Two CB receptors have been identified. Evidence supports cannabinoid receptor- and non receptor-mediated modes of action in blocking NMDA signaling and the inhibition of free radicals and TNF alpha secretion.

Objective: The present study was designed to assess the neuroprotective effects of endogenous cannabinoid Anandamide using in vivo well-defined mouse model of neonatal excitotoxic brain lesions, which mimic several aspects of brain damage associated with human cerebral palsy.

Methods: Mouse pups [postnatal age 5] were injected intrapallially with ibotenate acting on NMDA and metabotropic receptors, or S-bromowillardiine acting on AMPA-kainate receptors to produce excitotoxic stress and brain lesions immediately followed by intraperitoneal injection of Anandamide injected also 4, 8 and 12 hours later in the S-bromowillardiine injected pups. CB-1 receptor agonist [ACPA] was immediately injected intraperitoneally in the S-bromowillardiine injected pups. A CB-1 receptor antagonist [AM251] and a CB-2 receptor antagonist [AM630] were injected in S-bromowillardiine immediately Anandamide injected pups. Pups were sacrificed 5 days after the excitotoxic challenge.

Results: Anandamide slightly protected the cortex but had no significant effect on white matter in ibotenate-induced excitotoxic stress. In S-bromowillardiine pups, Anadamide provided dose-dependent neuroprotective effect on both cortex and white matter. This effect was mimicked by a ACPA and was blocked by a CB-1 receptor antagonist [AM251] but not CB-2 receptor antagonist [AM630]. Neuroprotection is observed when Anandamide was injected immediately or 4 hours after S-bromowillardiine but not 8 or 12 hours after the insult with a long-lasting effect as it was still observed when pups were sacrificed 25 days after the insult.

Conclusion: Findings indicate that cannabinoids provide some neuroprotection in these models through CB-1 receptor mediated mode of action in blocking NMDA signaling.

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CIRCULATING PYY, GHRELIN, LEPTIN AND ADIPONECTIN CONCENTRATIONS IN PRETERM INFANTS AT DISCHARGE FROM THE NEONATAL UNIT

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Background: Preterm infants are often in negative energy balance during the neonatal period. The aim of the present study was to determine the circulating concentrations of hormones involved in the regulation of metabolism, PYY, ghrelin, leptin and adiponectin, in preterm infants at discharge and to examine whether these hormones are interrelated with each other or correlated with the infants' anthropometric parameters, food intake and growth rates.

Materials and Methods: Serum levels of PYY, ghrelin, leptin and adiponectin were measured by RIA in 62 preterm infants (gestational age 32.0±2.1 weeks, postnatal age 40.9±14.8 days) and 15 fullterm infants of a comparable postnatal age. All the infants were formula-fed on demand.

Results: Preterm infants had higher PYY (1126.2±215.4 pg/ml, p<0.001) and ghrelin (721.7±98.0 pg/ml, p<0.001), and lower adiponectin levels (40.8±15.3 mcg/ml, p<0.01) than term infants (825.3±234.4, 602.4±93.7 and 53.1±16.0, respectively). Serum leptin concentrations did not differ significantly between preterm (0.1–15.6, median 1.2 mcg/L) and term infants (0.1–9.7, median 1.2 mcg/L). A correlation between the hormones studied was present only between serum PYY and ghrelin levels (r=0.50, p<0.001). In the entire study population, serum PYY concentrations were negatively correlated, whereas adiponectin concentrations were positively correlated, with gestational age, the infants' anthropometric measurements (birthweight, body weight, body length, BMI and head circumference) and the difference in body weight z-score. Ghrelin levels were negatively correlated with gestational age, the infants' anthropometric measurements and the difference in body length z-score. No correlation between serum leptin levels and any of the above variables was recorded. The concentrations of all the hormones studied were not correlated with the infants' caloric intake or weight gain. **Conclusions:** These findings indicate that PYY and ghrelin are increased in preterm infants, possibly to compensate for the negative energy balance. Adiponectin may have a role in the infants' growth.

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STREPTOCOCCUS AGALACTIAE INTERACTS WITH HUMAN PLATELETS BY ACTIVATING THE FCGAMMARII-RECEPTOR AND PROMOTING CD62-EXPRESSION

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Background: Group B Streptococcal infection is still the most common cause of neonatal sepsis in industrial countries. Activation of the platelet FcgammaRII-receptor (CD32) leads to platelet activation, aggregation and secretion, being tightly regulated by intracellular signalling pathways. Expression of inflammatory markers, e.g. P-selectin (CD62p) on activated platelets promotes adhesion of leucocytes to endothelial lesions and induces inflammatory reactions. We examined the molecular and functional effects of the direct interaction between platelets and Group B Streptococci (GBS).

Methods: Platelet-rich plasma was incubated with septic or non-septic strains in the presence or absence of FcgammaRII-receptor-blocking antibodies. Platelet aggregation was measured with PAP3-aggregometer (BioData). Activation of intracellular signalling pathways (PhospholipaseCgammaII (PLCgammaII), Calcium/Calmodulin-dependent proteinkinase II (CaMKII) and Myosin-light-chain-kinase 2 (MLC2)) was evaluated by western-blot-analysis. CD62p-expression was measured by flow cytometry.

Results: The septic strains induced rapid and full platelet aggregation (mean lag time until full aggregation: 5 min, range 2–8 min) while there was no aggregation after incubation with the non-septic strain. Incubation of platelets with the septic strains and to a lesser extent the non-septic strain lead to activation of PLCgammaII, CaMKII und MLC2; activation could be blocked by preincubation with anti-FcgammaRII-receptor-blocking antibodies. Incubation of platelets with the septic strains lead to a significant increase in P-selectin-expression (p< 0,05), while incubation with the non-septic strain (p=0,976) did not have any effect on CD62-expression in platelets.

Conclusions: In our experiments platelets incubated with the septic GBS-strains were activated, while incubation with the non-septic strain did only have little or no effect on platelet function. There seem to be different potentials to activate platelets in different GBS-strains. Group B streptococci seem to influence not only hemostasis but also inflammatory reactions in the setting of a possible septic event.

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FACTORS INFLUENCING BREAST-FEEDING SUCCESS AND DURATION.

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Objective and Methods: We surveyed 258 mothers and their 453 infants living in urban and rural areas of Evros county in order to investigate the frequency, the trends and factors influencing breast feeding practices.

Results: The mothers had been breast-fed for a mean period of 12.3 months while they breast-fed their infants for 3.3 months. Mothers living in rural areas breast-fed their infants longer than those living in urban settings (p< 0,01). There was statistically significant correlation between the breast-feeding duration of the mothers and the duration they breast-fed their infants (p<0,001). Maternal age and education as well as the infant's sex and birth order were not associated with breast-feeding duration.

Conclusion: Nowadays children in Evros county are breast-fed less than their mothers were, although the most significant predictor of the breast-feeding duration of infants is the length of time their mothers were breast fed.

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CHILDBIRTH AND ADULT CIRCUMSTANCES, SOCIAL MOBILITY AND ADULT OBESITY: FINDINGS FROM A BRAZILIAN BIRTH COHORT STUDY

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Objective: to investigate the influence of socioeconomic status at birth and during young adulthood, and social mobility, on adult central and total obesity in a developing country.

Methods: 1016 men and 1087 women born in Ribeirγo Preto, Brazil in 1978/79 were followed up to age 23/25. Main outcome measures were body mass index, waist circumference and standard deviation scores of triceps and subscapular skinfold thickness. Explanatory variables were family income at birth and at young adulthood measured in minimum wages, classified into three groups: low, medium and high. Simple and multiple linear regressions were used in the analysis.

Results: In the unadjusted analysis family income at birth was associated with obesity among men and women (P<0.05), with the exception of triceps skinfold among women (P=0.127) and subscapular skinfold among men (P=0.051). Current family income was associated with all measures of obesity among women (P<0.01) but not among men. After adjusting for both childbirth and current family income, childbirth income remained associated with waist circumference (P=0.023) and marginally with body mass index, triceps and subscapular skinfold (all P between 0.05 and 0.10) among men but with no measure of obesity among women. Current family income remained associated with all four measures of obesity among women (P<0.001). Only for women did upward social mobility lead to low levels of fatness. When educational level was used to measure socioeconomic position similar results were obtained.

Conclusions: Fatness in young adulthood was more strongly related to childbirth circumstances for men whereas adult socioeconomic position seems to be more important for women. Upward social mobility was associated with lower obesity levels among women and did not change fatness among men. Results were fairly consistent for all measures of obesity. Influences of childbirth circumstances and social mobility on obesity seem to be predominantly socially patterned rather than biologically programmed.