59.6 ml/kg/min and increased to 76.2 ml/kg/min at 48 hours of age. Mean cTOI was 64.9% at 6 hours of age, 63.3% at 12 hours of age, 67.5% at 24 hours of age and 67.7% at 48 hours of age. Mean cerebral fractional tissue oxygen extraction (cFTOE) did not change significantly and was 0.28, 0.31, 0.28 and 0.27 at 6, 12, 24 and 48 hours respectively. There was no significant correlation between SVC flow and cTOI.

Conclusion: Superior vena cava flow increased during first 48 hours of life. There was a slight increase in cTOI and no change in cFTOE. This may reflect increased cerebral metabolism during the first 48 hrs.

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NEONATAL TREATMENT TOXICITY ON DAY 7 AND THROUGHOUT THE FIRST MONTH OF LIFE

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Background and aims: Preterm infants are at high risk of drug-induced acute kidney injury. We aimed to determine the impact on GFR during the first month of life, of the drugs prescribed shortly after birth in the Neonatal Intensive Care Units

Methods: multicenter study nested in a cohort of 27-31 weeks GA infants. Infants parted into two groups: "Low GFR": GFR day7 < median GFR for GA; "High GFR": GFR day7 ≥ median GFR for GA. GFR was measured weekly for one month and analyzed with a logistic regression model and an ANOVA with repeated measures (drug and time effects throughout the first month).

Results: 269 infants included. Nephrotoxic drugs prescribed before day7 were mainly aminoglycosides, glycopeptides, and Cox-inhibitors. Cox-inhibitors were far the most nephrotoxic drugs, and GFR remained low for the first month of life after Cox-inhibitor administration. Even high plasmatic levels of aminoglycosides or of glycopeptides did not reach the nephrotoxic effect of Cox-inhibitors:

	"Low GFR" (n=183)	"High GFR" (n=86)	p
Cox inhibitors	55 (30.0%)	15 (17.4%)	0.03
Aminoglycosides >2 days	48 (26.2%)	26 (30.2%)	0.49
High serum level of aminoglycosides	28 (15.3%)	9 (10.5%)	0.28
Glycopeptides >2 days	18 (9.8%)	10 (11.6%)	0.65
Cox inhibitors + aminoglycosides	11 (6.0%)	4 (4.7%)	0.65
Cox inhibitors + glycopeptides	11 (6.0%)	3 (3.5%)	0.38

[Nephrotoxicity and GFR group]

Conclusion: If GFR day7 < median reference value, and infants have received ibuprofen, blood levels of other potentially nephrotoxic drugs should be closely monitored.

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BRAIN TISSUE OXYGENATION IN VERY LOW BIRTH WEIGHT INFANTS (VLBWI) IMMEDIATELY AFTER DELIVERY DURING RESUSCITATION USING SUSTAINED INFLATIONS

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Background: Near-Infrared Spectroscopy (NIRS) has been used to study cerebral oxygenation during various conditions in the NICU. However, essentially no information is available on brain tissue oxygenation in VLBWI immediately after delivery.

Objective: To study the timely relationship of brain tissue oxygenation (StO₂) as measured by NIRS in VLBWI immediately after delivery.

Methods: A Foresight laser diode NIRS device was attached to the head of 14 VLBWI (GA 28.2 ± 3.1 wks, BW 907 ± 301 g) immediately after delivery. Preductal arterial oxygenation (SpO₂) was measured using pulse oxymetry and infants were exposed to CPAP 5 cmH₂O, an initial FiO₂ = 0.40 and a sustained inflation (15 s) with a pressure of 20 cmH₂O. Depending on the response of the heart rate and SpO₂ a second inflation with 25 cmH₂O and a third inflation with 30 cmH₂O was allowed. FiO₂ was adjusted according to pulse oximetry

readings and was increased to 1.0 if heart rate did not increase within one minute. Thereafter, infants were supported with nasal IMV.

Results: Heart rate, preductal SpO₂, StO₂ during the first 6 minutes of life are given in the graph (medians, lower and upper quartiles).

[Figure]

Conclusions: StO₂ monitoring is feasible in VLBWI immediately after delivery. StO₂ values are lower immediately after delivery as compared to reference values obtained from healthy full-term newborn infants (Fauchere et al. J. Pediatr 2010) and remain low for the first minute of life to raise slowly with increasing heart rate.

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CLINICAL COURSE AND PROGNOSIS AT ONE YEAR OF 1043 INFANTS BORN BEFORE 31 WEEKS AND DISCHARGED IN KANGAROO POSITION

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Objective: Evaluate clinical course and prognosis at one year of a cohort of preterm infants cared in our ambulatory KMC program.

Design: Prospective cohort of 1043 preterm infants < 31 weeks of GA at birth discharged in kangaroo

position with periodical follow-up until 12 months corrected age to determine survival, growth, development and morbidity.

Results: 6889 infants were admitted to KMC program between 2002 and 2009. 1043 of them were < 31 weeks of GA at birth. 83% had completed follow up at one year. Overall mortality was 2,3%, with 70% of deaths occurring between discharge and 3 months. Nearly half of infants (47%) were readmitted at least once. Main cause of readmission before 40 weeks GA was anemia (56,6%) and before 3 months was respiratory infection (95,8%). Breastfeeding was a success, with 23.6% receiving exclusive breastfeeding and 75% mixed feeding reaching term. Average weight, length and head circumference were 8.285g, 70.9 and 45cm at one year of corrected age. Retinopathy was detected in 23,7% and blindness in 0,4%. Diagnosis of cerebral palsy at one year was 5,5%. Mean developmental coefficient at 12 months was 97.

Conclusions: Results highlight the importance of high quality follow-up programs to decrease morbidity, mortality and to overcome disabilities and neurological impairments that may respond to early intervention during first year of life of premature infants. Follow up beyond one year is recommended, as long-term complications of prematurity may not become evident until school age.

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HYPOXIA AND REOXYGENATION INDUCE ALTERATIONS IN WHOLE GENOME EXPRESSION IN LUNG TISSUE OF THE NEWBORN MOUSE

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Background and aims: Perinatal asphyxia is associated with hypoxia-reoxygenation injury. Supplementary oxygen use influences both morbidity and mortality.

To study whole genome expression alterations induced by supplementary oxygen in vulnerable tissues in a newborn mouse model of hypoxia and reoxygenation.