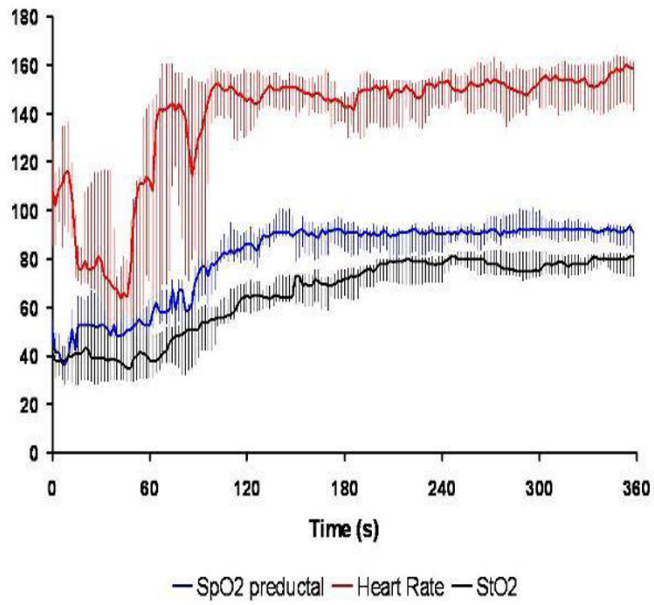
readings and was increased to 1.0 if heart rate did not increase within one minute. Thereafter, infants were supported with nasal IMV.

Results: Heart rate, preductal SpO_2, StO_2 during the first 6 minutes of life are given in the graph (medians, lower and upper quartiles).



[Figure]

Conclusions: StO_2 monitoring is feasible in VLBWI immediately after delivery. StO_2 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.

348

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

N. Charpak[1], E. Gomez[2]

[1]Kangaroo Foundation, [2]Integral Kangaroo Mother Care Program, San Ignacio Teaching Hospital, Javeriana University, Bogota, Colombia

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 readmittion 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.

349

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

E.J. Wollen[1], Y. Sejersted[1], M.S. Wright[1], C.C. Gunther[2], J.J. Pietrzyk[3], M. Bik-Multanowski[3], A. Madetko-Talowska[3], P. Kwinta[3], O.D. Saugstad[1]

[1]Department of Paediatric Research, Oslo University Hospital, Rikshospitalet, [2]Norwegian Computer Center, Oslo, Norway, [3]Departments of Pediatrics and Genetics, Jagiellonian University Medical College, Krakow, Poland

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.

Methods: C57BL/6 mice postnatal day 7 were randomized to hypoxia (8%O2, 36±0.5ºC) for 120 min and reoxygenation in 21% (H21, n=6) , 40% (H40, n=6), 60 % (H60, n=7) or 100% (H100, n=6) O2 for 30 min. Mice were then sacrificed and rapidly dissected on ice after 150 min recovery. Two control groups not exposed to hypoxia, but either 21% (C21, n=5) or 100% O2 (C100, n=8) for 30 min were used as comparison. GeneChip Mouse Gene ST 1.0 Arrays (Affymetrix) were used to analyze whole genome expression. Statistical analysis was performed by using BAMarray software. The Gene Ontology and DAVID Bioinformatic Resources 2008 databases were used for functional analysis.

Results: 560 genes were significantly differentially expressed in lung tissue between group C21 and either of the four intervention groups (H21: 39, H40: 148, H60: 343, H100: 145). Preliminary gene ontology analyses of the genes in the H40 and H60 group indicate that cell growth and differentiation, energy metabolism and inflammation are processes represented.

Conclusion: A significant difference in gene expression in 560 genes in lung tissue of newborn mouse was found in our hypoxia and reoxygenation model using 21, 40, 60 and 100% oxygen. The impact of the gene expression alterations is undergoing further analysis.

350

NEONATAL INOTROPIC SUPPORT: THE ROLE OF ANTENATAL RISK FACTORS

M. Issa, S. Job, A. Curley

Neonatal Unit, Cambridge University Hospital NHS Foundation Trust, Cambridge, UK

Introduction: neonatal units often use a combination of Dopamine and Dobutamine to treat hypotension in the preterm infant. Hydrocortisone is often used as a third or fourth line agent. Infants who are growth restricted and preterm often require multiple agents to combat hypotension.

Objective: to assess in which neonates Dopamine and/or Dobutamine were insufficient and characteristics of neonates where Hydrocortisone achieved a clinical response.

Methods: retrospective analysis of antenatal and postnatal factors in preterm infants requiring inotropic support in a UK tertiary neonatal unit.

Results: 41 preterm infants, mean gestational age 26 (range 23- 34)weeks, Out of 41 neonates, there were 10 sets of twins (3 MCDA) and 1 triplet, 2 had reduced end diastolic flow (EDF), 9/41 babies were affected by intrauterine growth restriction (IUGR). Using stepwise regression it was found that blood pressure was affected by reduced end diastolic flow antenatally or antepartum haemorrhage. 12/41 neonates needed >1 medication: 40% of these were IUGR. 14/41 needed repeat saline or blood boluses (4/14 were IUGR). 40/41 needed Dopamine. 9/41 needed Dobutamine and 10/41 Hydrocortisone. 5/10 infants requiring hydrocortisone were IUGR.

Conclusion: Intrauterine growth restriction is a significant risk factor for requiring multiple inotropic agents, these infants often do not respond adequately to Dopamine or Dobutamine alone. This is likely related to adrenal insufficiency following chronic hypoxia. Early judicious use of hydrocortisone in this group of infants may lead to earlier resolution of hypotension and its sequelae. Antenatal factors play an important role in response to inotropic agents.

351

PREDICTING NEONATAL AND INFANT MORBIDITY AFTER PERINATAL HYPOXIC-ISCHAEMIC INJURY

M. Maddock[1], **Z. Kecskes**[2], N. Lindsay[3], B. Lingwood[3]

[1]Medical School, Australian National University, [2]Neonatology, Canberra Hospital and Medical School, Australian Nation University, Canberra, ACT, [3]Perinatal Research Centre, Royal Brisbane and Women's Hospital, Brisbane, QLD, Australia

Background: Perinatal asphyxia is a common cause of neonatal morbidity and mortality, affecting 2-4 in 1000 term live births each year. The prediction of neurodevelopmental outcome is important for prognosis and for tailoring neuroprotective therapies to babies most likely to benefit from such treatments. Researchers have suggested that a combination of antepartum and intrapartum factors be used to identify infants most at risk of experiencing adverse outcome.

Method: Scoring systems by Portman and Talati that predict outcome after perinatal asphyxia were applied to a patient cohort of 65 near-term infants. In addition, pre-, peri- and postnatal data of these patients were assesses by uni- and multivariate