

pregnancy. Assessment of adrenal function should be preserved for newborns with clinical suspicion of adrenal dysfunction or with risk factors as prematurity or placenta bed pathology.

**PS-316 UMBILICAL BLOOD FLOW PATTERNS DIRECTLY AFTER BIRTH BEFORE DELAYED CORD CLAMPING**

<sup>1</sup>I Boere, <sup>2</sup>AAW Roest, <sup>3</sup>E Wallace, <sup>4</sup>ADI ten Harkel, <sup>5</sup>M Haak, <sup>6</sup>CJ Morley, <sup>3</sup>SB Hooper, <sup>7</sup>AB te Pas. <sup>1</sup>Pediatrics, Leiden University Medical Center, Leiden, Netherlands; <sup>2</sup>Pediatric Cardiology, Leiden University Medical Center, Leiden, Netherlands; <sup>3</sup>The Ritchie Centre Monash Institute for Medical Research, Monash University, Melbourne, Australia; <sup>4</sup>Pediatric Cardiology, Leiden University Medical Center, Leiden, Netherlands; <sup>5</sup>Obstetrics and Gynaecology, Leiden University Medical Center, Leiden, Netherlands; <sup>6</sup>Obstetrics and Gynaecology, University of Cambridge, Cambridge, UK; <sup>7</sup>Pediatrics, Leiden University Medical Center, Leiden, Netherlands

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**Background** Delayed cord clamping (DCC) effects both cardiopulmonary transition and blood volume in neonates. Understanding the circulation through the umbilical vessels immediately after birth, with cord and placenta intact, is important.

**Objective** To describe the duration and patterns of blood flow through the umbilical vessels during DCC.

**Methods** Arterial and venous umbilical blood flow was measured during DCC using Doppler ultrasound in a prospective, observational, study of uncomplicated term vaginal deliveries. Immediately after birth, the probe was placed in the middle of the umbilical cord and the pattern and duration of flow in the vein and arteries evaluated until cord clamping.

**Results** Thirty infants were studied. Venous: In 10% there was no flow, in 57% flow stopped at a median (IQR) min:sec of 4:34(3:03–7:31) after birth before cord was clamped, and in 33% flow continued until cord clamping at 5:13 (2:56–9:15). Venous flow was initially intermittent (100% increase during large breaths, stopped/reversed during crying), but became continuous. Arterial: In 17% there was no flow, in 40%, flow stopped at 4:22(2:29–7:17), while cord pulsations were still palpable. In 43% flow continued until cord was clamped at 5:16 (3:32–10:20). Arterial flow was pulsatile, unidirectional towards placenta or bidirectional to/from placenta. In 40% flow became almost continuous (non pulsatile) later after birth.

**Conclusion** During DDC venous and arterial umbilical flow occurs for longer than previously described. Net placental transfusion is probably the result of several factors of which breathing could play a major role. Umbilical flow is unrelated to cessation of pulsations.

**PS-317 QF-PCR AS A STAND-ALONE TEST FOR DIAGNOSIS OF ANEUPLOIDES IN PRE AND POSTNATAL SAMPLES: AN INDIAN REPORT**

S Agarwal, S Muthuswamy. Medical Genetics, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India

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Down syndrome is the most common aneuploides seen in live born babies with the prevalence of 1 in 1000 followed by other trisomies. The burden of aneuploides can be reduced with new molecular cytogenetic technology which helps in early intervention and genetic counselling. As our centre is being a referral centre for all genetic disorders, we receive a high risk couples related to chromosomal abnormalities as having one affected

child. Since we are providing QF-PCR as a stand-alone test for postnatal diagnosis, the same methodology was extrapolated for prenatal diagnosis.

Initially, 500 postnatal samples (Blood in EDTA vial) and 240 amniotic fluid samples were received for analysis of chromosomal aneuploidies from various part of the country. The DNA was extracted with QIAamp DNA mini kit by Qiagen. QF-PCR was carried out with the following markers D21S1411, D21S11, D21S1435, D21S1412, AMEL, SRY, D18S535, D18S391, D13S258, D13S634 and XHPRT, X22 whose heterozygosity have been studied.

We observed 100% concordance with the clinical diagnosis as well as cytogenetic analysis of postnatal samples. With these results we went for prenatal services were chromosomal studies are very common for suspected Down syndrome pregnancies. Out of 240 pregnancies studied, 2% (5) was of Trisomy 21 and a single case of Trisomy 18 was identified, these results were also reconfirmed with karyotyping results.

Results of present investigation reassure QF-PCR as stand-alone test for high risk pregnancies. This is the first study from India that tested the in-house developed multiplex QF-PCR for post and prenatal diagnosis.

**PS-318 ARE ANTENATAL CORTICOSTEROIDS LESS EFFECTIVE IN TWINS THAN IN SINGLETONS? A COHORT STUDY IN THE ITALIAN NEONATAL NETWORK**

<sup>1</sup>L Gagliardi, <sup>2</sup>R Lucchini, <sup>2</sup>S Giampietro, <sup>3</sup>R Bellù, <sup>3</sup>R Zanini. <sup>1</sup>Woman and Child Health, Ospedale Versilia, Viareggio, Italy; <sup>2</sup>Department of Pediatrics and Child Neuropsychiatry, Sapienza University, Roma, Italy; <sup>3</sup>Neonatal Intensive Care Unit, Alessandro Manzoni Hospital, Lecco, Italy

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**Background** Although antenatal corticosteroids (ACS) represent the paradigm of “evidence-based medicine”, their efficacy in case of twin pregnancy is not established, and available results are conflicting.

This study aimed at evaluating the association between ACS and neonatal outcomes in twins, comparing the results with those in singletons.

**Methods** A cohort of neonates 24–29 weeks gestational age (GA) without congenital anomalies, born in 2005–2012 and assisted in 90 hospitals adhering to the Italian Neonatal Network, was analysed.

Outcomes were: death, grade 3–4 intraventricular haemorrhage (IVH), cystic periventricular leukomalacia (PVL). Logistic regression models, adjusting for GA, sex and birthweight and clustering for hospitals, were used. Results were also checked adjusting for a propensity score of receiving ACS.

**Results** We studied 13029 infants (mean GA 27.1 weeks; mean birthweight 964 g); 81.4% were treated with ACS (any dose); 29% were twins. Twins were treated more often than singletons (84.4 vs. 80.2%,  $p < 0.001$ ).

Among twins, ACS were associated with a reduction of in-hospital death (adjusted Odds ratio, aOR = 0.75; 95% CI: 0.58–0.98) and IVH (aOR = 0.52; 95% CI: 0.40–0.68) but not PVL (aOR = 0.92; CI: 0.62–1.36).

The effect of ACS was always smaller in twins than in singletons (72% lower for death, 23% for IVH, and 15% for PVL).

Analyses using the propensity score approach yielded similar results.

**Conclusions** This large cohort allowed us to clarify that ACS prophylaxis is efficacious also in twins but the magnitude of the

effect is always lower than in singletons. Given the high prevalence of twins among preterm infants, this matter should be further investigated.

**PS-319** **CORD BLOOD VITAMIN D STATUS AND NEWBORN BODY COMPOSITION**

<sup>1</sup>E Malchau Carlsen, <sup>2</sup>KM Renault, <sup>3</sup>V DeKnecht, <sup>4</sup>K Nørgaard, <sup>3</sup>D Cortes, <sup>5</sup>KF Michaelsen, <sup>5</sup>C Mølgaard, <sup>6</sup>O Pryds. <sup>1</sup>Department of Pediatrics, Hvidovre University Hospital University of Copenhagen, Hvidovre, Denmark; <sup>2</sup>Department of Obstetrics and Gynaecology, Odense University Hospital University of Southern Denmark, Odense, Denmark; <sup>3</sup>Department of Pediatrics, Hvidovre University Hospital University of Copenhagen, Hvidovre, Denmark; <sup>4</sup>Department of Endocrinology, Hvidovre University Hospital University of Copenhagen, Hvidovre, Denmark; <sup>5</sup>Department of Sports Exercise and Nutrition, University of Copenhagen, Copenhagen, Denmark; <sup>6</sup>Department of Sports Exercise and Nutrition, Hvidovre University University of Copenhagen, Hvidovre, Denmark

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**Background and aims** Previous studies in newborns have found a positive association between adiposity and maternal and cord blood 25-hydroxy-vitamin D status (vit-D). It has been hypothesised that vit-D play a role in adipocyte metabolism and that this can be linked to obesity. Cord blood vit-D is closely associated with maternal vit-D concentration and is further affected by maternal obesity. The aim with our study was to examine the association between newborn cord blood vit-D and body composition where analyses were stratified by maternal pre-pregnancy obesity since this is a strong determinant of newborn body composition.

**Methods** Pre-pregnancy obese and normal weight mothers were included. Cord blood was collected at birth and newborn body composition was assessed using dual-energy X-ray absorptiometry within 48 h of birth. Sufficient cord blood and scans were obtained in 173(55%) mother-newborn dyads. Multiple linear regressions with vit-D was as a dependent variable were performed.

**Results** We included 41 pre-pregnancy normal weight-newborn dyads and 132 pre-pregnancy obese-newborn dyads. There was no difference in mean cord blood vit-D between offspring of normal weight and obese mothers (59.6 vs. 62.4 nmol/l ( $p = 0.64$ )). Vit-D was significantly associated with normal weight offspring body composition, positively with lean mass ( $p = 0.031$ ) and inversely with fat% ( $p = 0.037$ ) but was not associated with obese offspring body composition. See Table 1.

**Conclusion** We found an association between vit-D and newborn body composition in normal weight offspring. This implies that the effect of vit-D on newborn body composition may be determined by maternal weight.

**Abstract PS-319 Table 1** Association between newborn cord blood vitamin D (nmol/l) and maternal age and parity and newborn body composition in normal weight and obese mothers offspring

Dependant	Vitamin D (nmol/l)		Vitamin D (nmol/l)	
	Normal weight offspring (n = 41)	P- value	Obese offspring (n = 132)	P- value
Determinants	$\beta^*$		$\beta^*$	
Maternal age (years)	2.5	0.026	0.5	0.46
Primiparity (y/h)	34.5	0.004	9.8	0.10
Lean mass (g)	0.04	0.031	0.01	0.083
Fat (%)	-3.5	0.037	0.21	0.76

## Perinatology

**PS-319a** **EXTREMELY LOW EXCLUSIVE BREAST FEEDING (EBF) RATE AMONG THE SYRIAN REFUGEE COMMUNITIES IN JORDAN**

G Fander, N Beck, H Johan, W Dymnt. *International Programm, Medair, Lausanne, Switzerland*

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A total of 31,485 Syrian refugee households have been reached by the Medair nutrition programme covering 35% of the estimated number of refugees in Jordan urban areas. In April of 2014, a household survey was conducted to estimate exclusive breastfeeding (EBF) rates among those households reached by Medair with IYCF messages. 990 out of 31,485 households were selected by systematic random sampling for a telephone survey. Among those sampled, 12.9% (128 households) had children less than 6 months of age;  $24.2 \pm 7.7\%$  of these reported practicing exclusive breastfeeding within the previous 24 h. This value is much lower than levels of EBF reported in Syria prior to the crisis (42.6%) despite effective IYCF promotion activity reflected by the fact that 71.3% ( $\pm 6.4\%$ ) of lactating mothers surveyed were able to state more than two benefits of EBF covered. Considering EBF is one of the most effective way to save the lives of young children, this deterioration in EBF among refugees placing young children at an increased risk of death should serve as a warning to the humanitarian community that measures to improve EBF is needed immediately. Additionally the survey implies other interventions are needed to address the other potential obstacles to EBF practices such as cultural and social barriers. Group sessions to monitor the barriers and promoters of IYCF as well as developing a self-supporting system among caregivers influencing the social and cultural aspects of EBF may be helpful to facilitate dissemination of lessons learned among the refugee communities.

## Pneumonia

**PS-320** **THE RELATION OF TRAFFIC LOAD TO TRAFFIC-DEPENDENT POLLUTANTS AND CROUP**

L Stanislavchuk. *Pediatric Infection Disease, Vinnytsya National Medical University N.A. M. Pyrogov, Vinnytsya, Ukraine*

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**Objective** Some studies have compared the occurrence of croup with air pollution. Results have so far remained contradictory. Motor vehicles represent the principal source of air pollution in the city of Vinnytsya, Ukraine. The objective of this study was to determine the relation of traffic load to traffic-dependent pollutants and croup.

**Methods** Among a population of 8.067 children in residence near areas of high traffic density ( $>1.500$  motor vehicles/ hour) and 2.473 children in residence near areas of low traffic density ( $<300$  motor vehicles/ hour) cases of croup were registered by physicians during a 4 years period in 2000–03. Air pollution by sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), particulate matter, carbon monoxide (CO) were locally measured.

**Results** Areas with high traffic load are characterised by higher concentration of traffic-dependent pollutants and higher annual incidence of croup (Table).