Methods ECG electrodes and a PO sensor were attached as soon as possible after birth in healthy pre (term) infants. PO data with Signal Identification and Quality <0.30 were excluded. HR_{ECG} and HR_{PO} were compared every 30 s from 1–10 min.

Results 755 data pairs of 53 patients were analysed. Median (range) gestational age was 36 (27–41) weeks. Data from ECG and PO were acquired from 82 (26) and 99 (33)s after birth. Median HR_{PO} was <100 bpm the first 2 min after which it rapidly increased. HR_{ECG} remained stable at 150–160 bpm (table).

Conclusion HR measured by PO is significantly lower compared to ECG, which has important implications for clinical care in the first minutes after birth.

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Background and aims Cardiovascular disease is the leading cause of death worldwide. A growing body of evidence suggests that preterm infants develop an unfavourable cardiovascular risk profile in adult life. The aim of this study was to investigate whether early laboratory and ultrasonographic markers of an increased cardiovascular risk are present in former preterm infants at a preschool age.

Methods Former preterm infants born in Tyrol between 2006 and 2008 with a gestational age <32 weeks were followed up at a corrected age of five to seven years. Healthy preschoolers born at term served as controls. Glucose and cholesterol levels were determined after a minimum overnight fasting period of twelve hours. Aortic intima-media thickness (aIMT) was assessed by means of high resolution ultrasound and a software quantification tool.

Results 137 children (preterm: 64, term: 73) were examined. Blood samples were obtained from 80 participants (preterm: 57, term: 23). In comparison to children born at term, former preterm infants had significantly higher HDL cholesterol, but also fasting glucose levels. Total and LDL cholesterol levels tended to be higher in the preterm group, but these findings did not reach statistical significance. aIMT measurements did not differ between groups. All parameters were independent of current BMI percentile and gender.

Conclusions In comparison to children born at term, former preterm infants have higher fasting glucose levels and show dualistic cholesterol alterations at a preschool age. The relevance of these findings with regard to future cardiovascular health will be addressed by additional studies.

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Backgrounds and aims Several studies have stated the association between higher left ventricular mass and impaired systolic and diastolic function in obese adults. However, little is known in paediatric population. The aim of this study is to assess how early changes appear in obese and normotensive patients.

Methods Anthropometric and biochemical measurements were taken in 130 normotensive children, 88 with obesity (age 11.0 ± 2.8 years) and 42 with normal weight (age 11.1 ± 2.7 years). The function and left ventricular (LV) mass was assessed according to the formula of Devereux and indexed for height$^{2.7}$ to obtain left ventricular mass index (LVMI). The E/E' value, quotient between transmitral early filling wave (E) and the average of the diastolic anular velocity (E') was calculated for estimating the left ventricular filling pressure, therefore diastolic function.

Results The obese group showed higher levels of LVMI than control group (43.6 ± 14.2 g/m$^{2.7}$ vs 36.3 ± 13.3 g/m$^{2.7}$, p = 0.020), and higher levels of ratio E/E' (6.03 ± 0.97 vs 7.24 ± 1.09, p < 0.001). The areas under the curve are 0.679 for LVMi and 0.757 for E/E'. Therefore, E/E' parameter is more valid than LVMi with respect the excess of BMI. The cut-off point to E/E' between obese and normal weight children was 6.55.

Conclusion In order to select one of the two main cardiac alterations found, diastolic function is a more sensitive/early finding than increased LV mass in obese normotensive children.

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Background Supraventricular tachycardia (SVT) is the most common arrhythmia in infants.

Aim To study the clinical presentation and outcome of narrow complex cardiac arrhythmias in infants

Methods All infants diagnosed with narrow complex arrhythmias in children less than 1 year of age between 2007 and 2013 at Addenbrooke's hospital were included in the study.

Results 34 infants diagnosed with narrow complex arrhythmias were identified. Eighteen (53%) infants presented within first 7 days after birth, 8 (24%) between 1–4 weeks and the remaining 8 (24%) presented after 4 weeks of age.

Only 3 infants had antenatal diagnoses of arrhythmia. SVT was diagnosed in 27 infants (80%). Other types of arrhythmias included atrial flutter (2) and automated atrial tachycardia (5). Eight infants had underlying significant congenital heart disease.

Fifteen infants were excluded from study as 3 died of other serious underlying conditions, 5 transferred to other hospitals and 7 did not require maintenance therapy.

Of the 19 infants diagnosed with SVT needing maintenance therapy, 6 (32%) are still on maintenance therapy while in 13 (68%) infants maintenance therapy was stopped. Ten had no recurrences after stopping maintenance while three had recurrences needing re-starting treatment.

The average duration of medical treatment was 8 months. Maintenance medications used included propranolol, flecainide and amiodarone. 63% cases had monotherapy while 37% needed multi-drug therapy.

Conclusion Narrow complex tachycardia carries good prognosis in infants without any underlying morbidities. About two thirds

infants are managed on single medication for an average duration of 8 months.

Hypoxic-Ischemic Encephalopathy Biomarkers

PS-107 A RATING SCALE (RS) FOR EARLY AND ACCURATE EVALUATION OF THE SEVERITY OF HYPOXIC-ISCHAEMIC ENCEPHALOPATHY (HIE)

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Background Clinical RS for HIE are intended to determine trial entry and to compare groups within or between trials. Categorical current schemes do not reflect the broad clinical continuum spectrum of HIE and they were not design for this task.
Objective To prospectively validate a new structured multi-item RS for HIE.
Methods A standardised structured ordinal RS for HIE with 7 clinical items (alertness, spontaneous motor activity, motor response elicited by stimuli, posture, myotatic reflexes, breathing and clinical seizures) and two aEEG items (background and electric seizures), scored by an asymmetric scale (0–8, with higher scores indicating more severe dysfunction) was designed.

The RS was scored in 75 term infants; 47 infants with HIE and in 28 control healthy infants by two blinded examiners within the first 8 h of life. Stages of HIE were established on the basis of our previous qualiative scheme.
Results There were no differences between both cohorts regarding gestational age, weight, and age at evaluation. The Intra-Class Correlation Coefficient of the RS was 0.969 in the group of HIE group and 0.930 in the control group. The Internal consistency (Cronbach's alpha) was 0.897.

The ROC curves depicted that RS distinguished between HIE and control subjects (cut-off 3.5; AUC 0.89) and more importantly between the different stages of HIE: mild compared to moderate HIE (cut-off 7; AUC 0.981) and moderate compared to severe HIE (cut-off 30; AUC 0.920).
Conclusions Our RS for HIE appears to be valid, reliable and sensitive to reflect the severity of HIE.

PS-108 URINARY BIOMARKERS MAY HELP PREDICT OUTCOME IN NEONATAL ENCEPHALOPATHY

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Background Following a perinatal hypoxic-is chaemic insult, term infants are at risk of multi-organ injury including AKI. Infants with NE experience up-regulation of urinary cytokines which may reflect severity of brain injury.

Objective To investigate the association between novel urinary biomarkers and outcome in a group of term infants with NE compared to controls.
Methods Levels of urinary biomarkers [Albumin, B2M, Cystatin-C, EGF, NGAL, Osteopontin, Uromodulin] were serially measured over day 1–11 in a group of term newborns with NE and controls. These values were compared to grade of encephalopathy defined by Sarnat score.
Results Ten control and 82 cases had urine samples collected (Grade 0 NE = 7, Grade I NE = 22, Grade II NE = 42, Grade III NE = 11). Thirty-nine infants underwent TH, 4 infants died. Control infants had significantly lower B2M on day 1, NGAL on day 1–2 and significantly higher urinary EGF on day 2–3 and Uromodulin on day 3, compared with cases (p-values
Conclusion Infants with NE have elevated urinary biomarkers compared to controls. Abnormal grade of encephalopathy is best predicted by day 2 urinary Cystatin-C and day 3 NGAL. Urinary biomarkers may have a role in long term outcome prediction following NE.

PS-109 B-LINES IN LUNG ULTRASOUND IN NEWBORNS: COMPARISON WITH STATIC LUNG COMPLIANCE

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Background and aims Vertical artefacts (B-lines) in lung ultrasound have been shown to correlate with lung liquid. In neonates the abundance of B-lines decreases after birth reflecting the decrease in the liquid content of the lungs. Static lung compliance, a sign of the elasticity of the lungs, improves after birth. Our aim was to study the correlation between static lung compliance and lung ultrasound in neonates.
Methods 24 healthy term infants were studied. Static lung compliance was measured by the double occlusion technique at the age of 0–4 h during silent sleep and regular respiration. Lung ultrasound was performed immediately after the compliance measurement. B-lines in ultrasound from six designated areas on the chest were scored on a 5-step scale to yield the US score.
Results Static lung compliance correlated significantly (p = 0,043, Pearson Correlation) with the abundance of B-lines in ultrasound.
Conclusion Our result supports the utility of lung ultrasound in estimating lung liquid.

PS-110 DOES AMPLITUDE-INTEGRATED ELECTROENCEPHALOGRAPHY (AEEG) MONITORING ADD DIAGNOSTIC VALUE IN ASPHYXIATED NEONATES IN A NON-NICU SETTING?

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Background and aims Asphyxiated neonates are at risk for developing hypoxic ischaemic encephalopathy and seizures. Although conventional electroencephalography (cEEG) is the standard method to detect subclinical seizures and encephalopathy, aEEG is a validated bedside screening tool used in routine clinical practice in many NICUs.