has been recently related to a diffuse brain injury pattern. This study aims to analyse the relationship of total and regional CC volumes with intelligence and motor impairment severity in dyskinetic CP.

**Methods** 15 subjects (age range, 12–34) with dyskinetic CP and signs of perinatal asphyxia underwent a MRI. CC total, anterior, central and posterior volumes were calculated (Figure 1). The intelligence and motor scales most commonly used in CP were administered.

**Results** The CC total volume and most of its parts were related to intelligence and motor measures (Table 1).

### Abstract O-073 Table 1 Partial correlation controlling for age

<table>
<thead>
<tr>
<th>Intelligence</th>
<th>Motor</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal1</td>
<td>Non-verbal2</td>
<td>GMFCS</td>
<td>BFMF</td>
</tr>
<tr>
<td>TOTAL CC</td>
<td>0.773***</td>
<td>0.775***</td>
<td>0.641***</td>
</tr>
<tr>
<td>ANTERIOR</td>
<td>0.612**</td>
<td>0.681**</td>
<td>no significant</td>
</tr>
<tr>
<td>CENTRAL</td>
<td>0.659**</td>
<td>0.637**</td>
<td>0.619**</td>
</tr>
<tr>
<td>POSTERIOR</td>
<td>0.812***</td>
<td>0.779***</td>
<td>0.684**</td>
</tr>
</tbody>
</table>

* <.05; ** <.01; *** <.001; GMFCS: Gross Motor Function Classification System; BFMF: Binomial Fine Motor Function; MACS: Manual Ability Classification System; 1Peabody Picture Vocabulary Test-3rd; 2Raven’s Progressive Matrices.

**Conclusions** Total CC volume may be indicative of intelligence and motor status in dyskinetic CP. Regionally, the posterior part of the CC is not found to be related to motor function. This result agrees with the fact that premotor and sensorimotor fibres are located more posteriorly than previously thought.

### New Concepts In Neonatal Sepsis

**O-074** THE RELATIONSHIP BETWEEN MULTISITE NIRS-MEASUREMENTS AND ROUTINE HAEMODYNAMIC MEASUREMENTS IN PRETERM INFANTS WITH CLINICAL SEPSIS

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**Background** Multisite Near-infrared spectroscopy (NIRS) monitoring may help to detect circulatory failure in preterm infants. The aim of this study was to assess the correlation between multisite NIRS-measurements and routine haemodynamic measurements in preterm infants with clinical sepsis.

**Methods** Prospective exploratory cohort study in which preterm infants (GA<34) were enrolled. NIRS measurements were performed in addition to routine measurements (cardiac output, pulmonary blood flow, mean blood pressure) in the NICU. Analysis was performed using standard statistical methods. Results are expressed as mean ± SD. Differences were considered significant at *p* < 0.05.

**Results** Of 72 eligible subjects, 21 infants were included in the study. Multisite NIRS measurements were highly correlated with routine haemodynamic measurements (Pearson’s correlation coefficient ranging from 0.8 to 0.9). Additionally, NIRS measurements were highly predictive of clinical sepsis status (sensitivity 100% and specificity 95%).

**Conclusions** Multisite NIRS monitoring is a promising tool for the early detection of sepsis in preterm infants.

### Non-Invasive Ventilation – What is the Evidence?

**O-077** MEASUREMENT OF RESPIRATORY MECHANICS AND THORACOABDOMINAL ASYNCHRONY INDICES IN NEONATES BY RESPIRATORY INDUCTANCE PLETHYSMOGRAPHY DURING NON-INVASIVE VENTILATION

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**Background** Measurement of respiratory mechanics during non-invasive ventilation (NIV) precludes use of the traditional airway flow sensor. Increasing use of NIV in premature infants necessitated novel instrumentation for measuring airflow without interfering with the nasal/oral interface. Respiratory inductance plethysmography (RIP), in addition to providing chest wall motion analysis, may be used for volume and airflow measurements when properly calibrated.

**Objective** To develop an efficient RIP calibration technique to allow bedside measurement of respiratory mechanics and to validate its accuracy against traditional pneumotachometer (PNT) measurements while simultaneously computing thoracoabdominal asynchrony indices in premature infants.

**Design/methods** RIP ribcage and abdominal signals were recorded simultaneously with facemask PNT signals. RIP was calibrated by qualitative diagnostic calibration and multiple