

**O-047** **INSULIN TREATED HYPERGLYCAEMIA, HYPERALIMENTATION AND GROWTH IN VERY PRETERM INFANTS RECEIVING PARENTERAL NUTRITION**

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**Background** We have shown that hyperalimentation using a Standardised, Concentrated, Added Macronutrients Parenteral (SCAMP) nutrition regimen improves early head growth. Hyperglycaemia hinders hyperalimentation strategies in very preterm infants (VPI) in the first 14 days of life. Insulin-treated hyperglycaemia (ITH) avoids the need to reduce glucose intake, although the evidence for benefit is limited. We hypothesised that VPI with ITH would achieve optimal growth with hyperalimentation.

**Methods** SCAMP and control groups were identified from the previously published RCT (ISRCTN 76597892). Infants were substratified into ITH and non-ITH within their original group randomisation. Hyperglycaemia necessitating insulin treatment required 2 consecutive blood glucose measurements  $>12\text{mmol/l}$ . Actual mean daily protein/energy intake data and weekly measurements of head circumference (HC) and weight were collected d1–28.

**Results** Mean (sd) daily protein/energy intake and change in HC ( $\Delta\text{HC}$ ) and weight ( $\Delta\text{Wt}$ ) between birth and d14 are summarised in Table 1.

**Abstract O-047 Table 1**

	SCAMP		p	Control		p
	ITH (n = 34)	Non-ITH (n = 34)		ITH (n = 29)	Non-ITH (n = 42)	
Daily (d3–14) intake:						
Protein (g/kg/d)	3.45 (0.37)	3.52 (0.27)	0.38	2.84 (0.20)	2.87 (0.24)	0.58
Energy (kcal/kg/d)	95.8 (9.3)	99.2 (6.2)	0.13	84.9 (6.7)	86.4 (7.6)	0.36
$\Delta\text{HC}$ at d14 (mm)	14 (6)	11 (5)	0.03	10 (6)	10 (6)	0.94
$\Delta\text{HC}$ at d14 (SDS)	-0.02 (0.43)	-0.20 (0.33)	0.06	-0.30 (0.46)	-0.28 (0.39)	0.84
$\Delta\text{Wt}$ at d14 (g)	137 (108)	109 (90)	0.25	85 (79)	75 (96)	0.63
$\Delta\text{Wt}$ at d14 (SDS)	-0.40 (0.59)	-0.54 (0.41)	0.26	-0.55 (0.47)	-0.72 (0.44)	0.12

**Conclusions** ITH is associated with optimal early growth when combined with hyperalimentation.

**O-047a** **PARENTS' COMPLEMENTARY FEEDING RELATED INFORMATION SOURCES – AN OBSERVATIONAL STUDY**

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**Introduction and aims** The impact of early nutrition habits is of extreme importance for future development and nutritional status. Many aspect of infants' nutrition are based upon traditions and popular beliefs of the societies. This study was aimed to identify nutrition-related information sources for parents towards complementary feeding practices and to determine the variables that influence decision making regarding this nutritional period.

**Methods** A longitudinal study was carried out in "Grigore Alexandrescu" Emergency Children's Hospital from Bucharest, the capital of Romania, evaluating toddlers at their check-up visit at 1 year old. Data collection included interview questionnaires with parents upon 3 outcomes: complementary feeding, socio-demographic aspects and nutrition related information source.

**Results** A total of 382 parents completed the questionnaire, with a response rate equivalent to 85.29%. There is a percentage of 44.7% of mothers that declared they followed the paediatrician advice upon complementary feeding. This is mainly the case for urban population (56.0% vs. 21.6%), highly educated mothers (69.2% vs. 11.1%) and high economic level (69.8% vs. 12.9%). Friends and family are the most important sources for nutrition information mainly for mother in rural regions, low incomes and basic educational level ( $p < 0.05$ , CI 95%). Multivariate analyses showed that friends and family used as nutrition information sources are among risk factors for inappropriate complementary feeding practices ( $p < 0.001$ , CI 95%).

**Conclusion** Paediatricians and primary health care providers should offer solid and valuable alternatives to parents using non-medical sources of information when weaning their infants in order to avoid future mistakes.

## Long-Term Outcome

**O-048** **PREDICTIVE VALIDITY OF EARLY DEVELOPMENTAL ASSESSMENTS IN IDENTIFYING SCHOOL – AGE COGNITIVE DEFICITS IN CHILDREN BORN PRETERM OR VERY LOW BIRTHWEIGHT: SYSTEMATIC REVIEW AND META-ANALYSIS**

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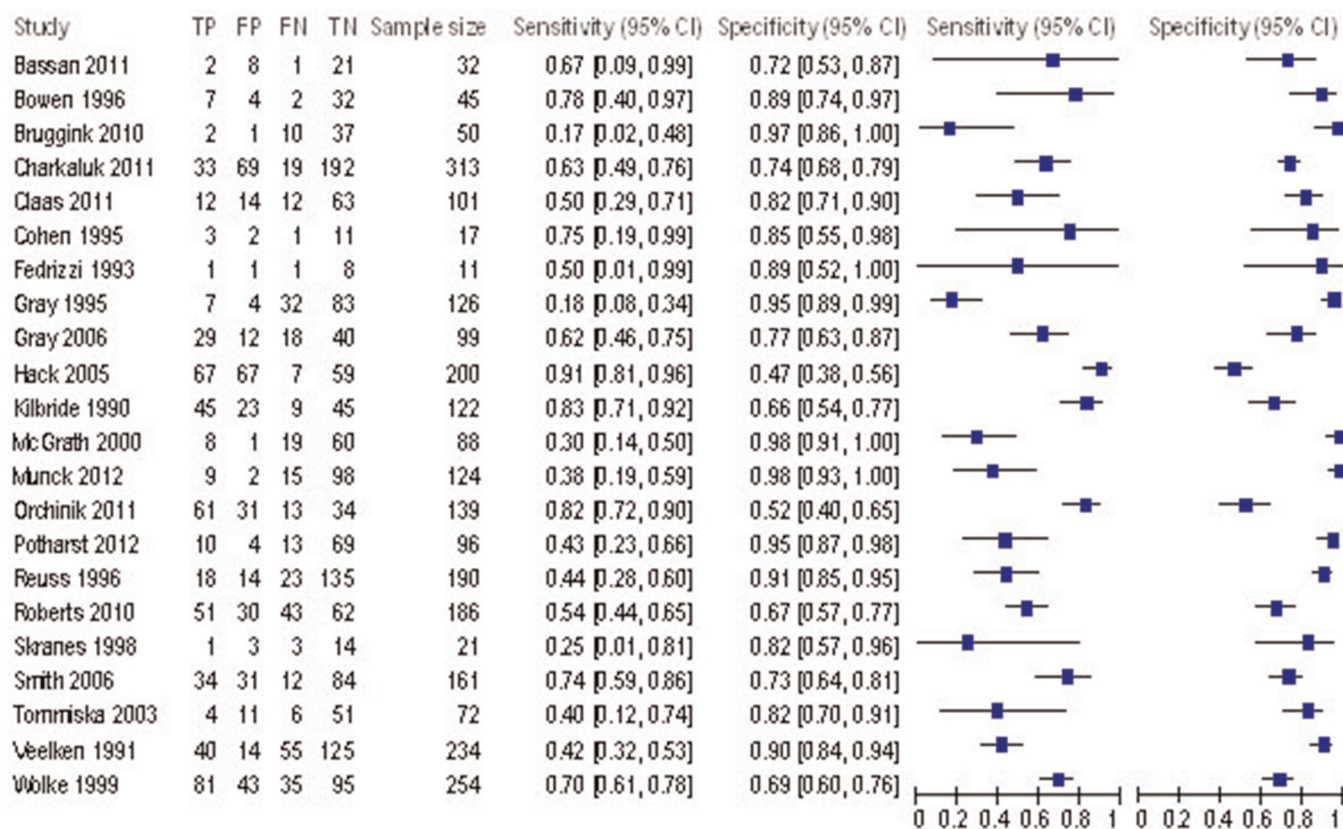
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**Background** Developmental outcomes of very preterm (gestational age  $\leq 32$  weeks) or very low birthweight ( $<1500\text{g}$ ) children are commonly reported before age 3 years.

**Aims** To determine the validity of early developmental assessments in predicting school-age cognitive deficits in this population.

**Methods** English-language studies, identified through MEDLINE, in which at least 2 serial developmental/cognitive assessments (at ages 1–3 years and  $\geq 5$  years) were reviewed. For included studies, cross-tabulations of cognitive deficit (defined as test scores one SD below the population mean) identified by each assessment were constructed. With school-age assessment as the reference standard, the sensitivity and specificity of early assessment for cognitive deficit were calculated. We fitted a hierarchical summary receiver operator characteristic (HSROC) curve to obtain pooled estimates of sensitivity and specificity. Meta-regression was used to evaluate study and population characteristics associated with assessment validity.

**Results** Twenty-two studies ( $n = 2681$  children) were included. Early assessment tools were Bayley Scales of Infant Development (14 studies), Griffiths Mental Development (5), Stanford-Binet Intelligence (2) and Brunet-Lezine (1) Scales; 11 different school-age cognitive tests were used. Assessments were conducted at 18–40 months for early and 5–18 years for school-age assessments. There was significant between-study heterogeneity in the reported sensitivities and specificities (figure 1,  $p < 0.01$ ). Gestational age, birthweight, age at assessment and time

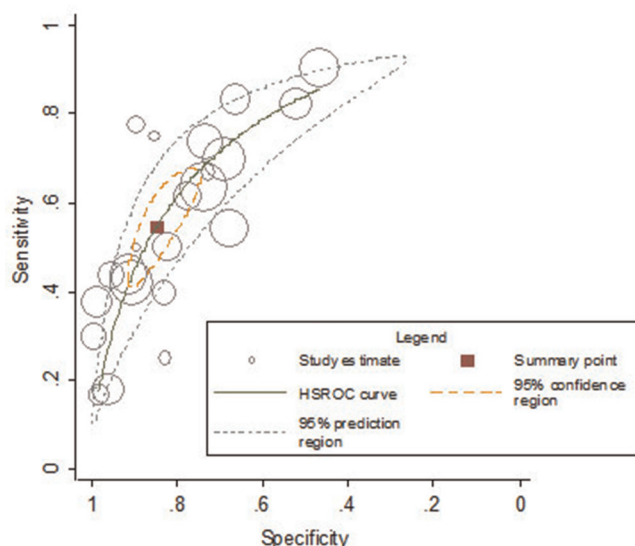


TP = true-positive; FP = false-positive; FN = false-negative; TN = true-negative.

Extracted data (numbers of TP, FP, FN and TN) and the estimates of sensitivity and specificity with 95% confidence intervals from each study are shown. The forest plots present the variability in the sensitivity and specificity estimates.

**Abstract O-048 Figure 1** Coupled forest plot of the sensitivity and specificity of early developmental assessment for school age cognitive deficit

difference between assessments did not explain between-study heterogeneity in results. From the HSROC curve (figure 2), pooled sensitivity (95% CI) was 0.55 (0.44–0.64) and specificity 0.84 (0.77–0.89).



**Abstract O-048 Figure 2** Hierarchical summary receiver operator characteristic (HSROC) curve of study estimated sensitivity plotted against specificity

**Conclusion** Early developmental assessment had poor sensitivity but good specificity at predicting school-age cognitive deficits.

#### O-049 PARENT'S OVER IDENTIFICATION OF AUTISM SPECTRUM DISORDER IN EXTREMELY PREMATURE INFANTS AT FOUR YEARS OF AGE

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**Background and aims** There is increasing interest and speculation about the relationship between prematurity and autism spectrum disorders (ASD). The majority of studies have been retrospective with limited collateral information about the child. This study sought to determine how children designated by their parents' ratings for ASD differed in premature morbidities, cognitive abilities, autism ratings by a psychologist, and executive functioning skills.

**Method** This prospective longitudinal study of 174 extremely premature infants born  $\leq 30$  weeks gestation were followed to age four. The BSID-III was administered at 6, 15 and 24 months with the Infant/Toddler Sensory Profile being completed at 6 months of age. At 4 years, the parents completed the Gilliam Autism Rating Scale (GARS) and the Behavioural Rating Inventory of Executive Function-Preschool Version (BRIEF-P). The psychologists completed the Children's Autism Rating Scale