specific standardised tests in order to achieve effective neurodevelopmental surveillance of this vulnerable population.

G111 IMPACT OF TRANSCUTANEOUS BILLIRUBINOMETER TESTING ON BABIES WITH VISIBLE JAUNDICE BY COMMUNITY MIDWIVES ON HOSPITAL REFERRALS

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Introduction Referrals of newborn babies with jaundice to hospital has emotional and financial impact on parents and increases work load of hospitals. We report results from a service evaluation project looking at the introduction of transcutaneous bilirubinometers (TsB) testing to community midwives using JM 103 TsB as recommended in NICE neonatal jaundice guideline (CG 98).

Aim Assess impact of TsB to reduce avoidable hospital referral by community midwives.

Methodology A limited pilot project undertaken in 2013 showed that in the absence of TsB only 40% of babies referred to hospital for neonatal jaundice were admitted. Average waiting time before medical review was 255 min in paediatric assessment units. With innovative project funding from the Welsh Government the project team trained and equipped all 80 community midwives in the Health Board with a TsB each from February 2014. A clear referral pathway was established and activity recorded.

Results Data was collected on all babies reviewed by midwives at home for a 6 month period between 01/02/2014 to 31/07/2014 in the Health Board. Compliance of midwives to protocol was high. 5647 babies were reviewed by midwives, 1046 (19%) were tested with TsB for visible jaundice and 63 (1%) were referred to hospital. Of 48 babies audited 69% of those referred

were admitted and 54% received phototherapy. Average waiting time reduced to a quarter at 58 min. Service was given a maximum satisfaction rating by most parents. JM 103 TsB was found to be 100% specific in predicting need for hospital admission (95% CI 78% –100%) and need for phototherapy (95% CI 84.4 –100%).

Conclusion Judiciously used TsB can half avoidable hospital referrals and quarter waiting times for babies with neonatal jaundice in first 2 weeks of life. This combined with immediate reassurance and a non invasive pain free test resulted in high parent satisfaction scores. Financial benefits incur to parents from reduced travel costs and to hospitals from reduced blood testing and saved medical time.

G112 CHORIOAMNIONITIS IN PRETERM INFANTS IS NOT ASSOCIATED WITH BRAIN SIZE AND MATURATION AT TERM EQUIVALENT AGE

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Introduction Chorioamnionitis is a risk factor for adverse neurodevelopment in preterm infants but the effect on brain size or maturation is unclear. This study aimed to determine the association between perinatal characteristics and histological chorioamnionitis in a cohort of preterm infants. We also aimed to establish the association between chorioamnionitis and brain size and maturation.

Methods A large prospective cohort of preterm infants was identified and data from placental histology reports were

Abstract G112 Table 1 Participant characteristics

Chorioamnionitis and brain MRI: Results 1 Nov 2014				
	None (n=179)	Chorioamnionitis		P value
		Maternal response only (n=19)	Both maternal and fetal response (n=39)	
Antenatal steroids	136 (76.0)	17 (89.5)	32 (82.1)	0.32
Gestation at birth in weeks, mean (SD)*	31.8 (3.4)	30.0 (3.7)	29.1 (3.6)	<0.0001
Gestational age groups				
• Very preterm	71 (39.7)	13 (68.4)	28 (71.8)	<0.0001
• Mod/late preterm	108 (60.3)	6 (31.6)	11 (28.3)	
Birthweight in grams, mean (SD)*	1619 (613)	1597 (928)	1331 (559)	0.04
Birthweight z-score, mean (SD)*	-0.7 (1.1)	0.1 (1.1)	-0.2 (0.7)	0.0003
Small for gestational age	30 (16.8)	0 (0)	0 (0)	-
Male	91 (50.8)	11 (57.9)	18 (46.2)	0.70
Multiple birth	87 (48.6)	3 (15.8)	9 (23.1)	0.001
Ruptured membranes>24 hours	16 (9.3)	5 (26.3)	22(56.4)	<0.0001
Any IVH	10 (5.6)	3 (15.8)	10 (25.6)	<0.0001
Cystic PVL	0 (0)	1 (5.3)	0 (0)	-
Chronic lung disease	23 (12.9)	3 (15.8)	10 (25.6)	0.13
Postnatal steroids	11 (7.9)	1 (5.9)	3 (9.4)	0.87

Data are n (%) unless otherwise specified; SD – standard deviation, IVH – intraventricular haemorrhage, PVL – periventricular leukomalacia; All comparisons using chi-squared except for those marked * where ANOVA used instead

Abstract G112 Table 2 Association between chorioamnionitis and MRI measures

	Chorioamnionitis			Coefficient (95% CI) Adjusted p value ^a	
	None (n=165)	Maternal response only (n=15)	Both maternal and fetal response (n=32)	Maternal response compared with none	Both maternal & fetal response compared with none
Brain measures					
Brain biparietal diameter (mm)	82.5 (4.5)	84.0 (3.8)	83.1 (4.2)	2.0 (-0.1, 3.9) p=0.05	1.6 (-0.1, 3.2) p=0.06
Corpus callosum – genu (mm)	4.3 (1.4)	3.6 (1.6)	4.1 (1.4)	-0.2 (-0.8, 0.3) p=0.42	0.3 (-0.1, 0.8) p=0.14
Corpus callosum – body (mm)	2.1 (0.5)	2.0 (0.6)	2.0 (0.6)	0.02 (-0.2, 0.3) p=0.88	0.08 (-0.1, 0.3) p=0.48
Corpus callosum – splenium (mm)	3.8 (1.0)	3.5 (1.6)	3.4 (1.0)	-0.03 (-0.7, 0.6) p=0.92	-0.05 (-0.4, 0.3) p=0.79
Deep nuclear gray matter (mm ²)	1235.6 (106.2)	1262.9 (102.5)	1244.6 (105.9)	23.5 (-28.5, 75.6) p=0.38	13.2 (-28.9, 55.3) p=0.54
Transcerebellar diameter (mm)	55.5 (3.1)	54.8 (2.8)	55.2 (3.0)	-0.4 (-1.7, 1.0) p=0.58	0.6 (-0.4, 1.5) p=0.22
CSF measures					
Right lateral ventricle (mm)	5.9 (1.8)	6.7 (3.5)	6.2 (1.9)	0.7 (-1.0, 2.3) p=0.45	0.2 (-0.5, 0.8) p=0.63
Left lateral ventricle (mm)	5.6 (1.8)	6.1 (3.1)	5.8 (2.0)	0.3 (-1.1, 1.8) p=0.64	-0.1 (-0.8, 0.6) p=0.77
Interhemispheric distance (mm)	2.8 (1.3)	2.9 (1.7)	3.2 (1.9)	-0.1 (-0.9, 0.8) p=0.83	0.03 (-0.7, 0.7) p=0.93
Brain maturation					
PLIC myelination complete, n (%)	139 (84.2)	14 (93.3)	27 (84.4)	2.0 (0.2, 23.6)* p=0.59	0.9 (0.3, 2.6)* p=0.89
Gyral maturation >38 weeks, n (%)	94 (57.0)	5 (33.3)	13 (40.6)	0.4 (0.2, 1.3)* p=0.13	1.0 (0.4, 2.4)* p=0.92

*Results presented as odds ratios (95% CI)

^a Using GEE with robust standard errors to account for multiple births, all analyses adjusted for gestation at MRI, gestation at birth, sex and bw sds

collected and chorioamnionitis, characterised into either no inflammatory response, maternal response only or both fetal and maternal response. All infants had brain MRI scans at term equivalent age. T1 and T2 weighted images were systematically scored for size of cerebral structures, degree of myelination, gyral maturation, signal abnormalities and presence of cysts. Differences between groups were compared using linear regression for continuous variables and logistic regression for categorical variables.

Results Of the 237 infants included in this study, 58 (24.5%) had histological evidence of chorioamnionitis.

Table 1 summarises the demographic data. Infants with evidence of chorioamnionitis on placental histology had higher rates of preterm delivery ($p < 0.0001$), low birth weight ($p = 0.04$) and prolonged rupture of membranes ($p < 0.0001$). Those with chorioamnionitis had higher rates of intraventricular haemorrhage ($p < 0.0001$).

Chorioamnionitis, however, was not associated with brain injury or delayed maturation on qualitative MRI assessment. The MRI scoring data is shown in Table 2.

G113(P) SURVIVAL IN INFANTS BORN AT LESS THAN 24 WEEKS GESTATION – A POPULATION BASED STUDY

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Background The management of infants born at less than 24 weeks gestation (<24 w) remains contentious. In a large population based cohort 1993–2008 we previously showed no

appreciable increase in long-term survival for liveborn infants <24 w, although median age at death increased over each successive 5-year epochs. We aimed to review recent changes in survival <24 w, and to determine risk factors that might predict non-survival at an earlier age.

Methods Cases (live-born infants at 22–23w) were identified using a well-validated population based database (Regional Maternity Survey Office, Northern Region, UK) for the 5-year epoch 2008–2012. We included cases still alive at 6 h of age, in order to identify a group where the intention to provide active management appears likely. Survivors were identified from unit databases of the 4 tertiary level neonatal units, and individual case notes reviewed.

Results During the study period 55 infants (56% male) born at 22–23w ($n = 2$ at 22w) were alive at 6 h (birth prevalence ~4:10,000). Of these 24/55 infants (44%) were alive at 12 months age (50% male); 18/24 survivors received at least one dose of steroids. Median survival of non-survivors was 2.65 days (excludes one case known to have died at >2 years age). 7/31 non-survivors had a laparotomy, 3 had retinopathy of prematurity (ROP) treatment, 3 had PDA ligation, and only 2/31 ever achieved full feeds. Amongst survivors, 20/24 required some form of invasive surgery/intervention (4 laparotomy, 2 other surgery, 15 laser ROP, 2 Avastin for ROP, and 14 PDA ligation.) There was no significant difference in birthweight between survivors and non-survivors. Initial analysis did not identify early postnatal factors that enabled clear identification of infants who subsequently died.

Conclusion Survival at <24 w has increased dramatically in this population over the last few years, but was not associated with a prolonged period of intensive care in those who did not survive. However, there was considerable morbidity (e.g. surgical procedures) in both groups. Increased survival may be due to several factors, and will be affected by clinician and parental attitudes.