cardiomyopathy. We report a case of aortic and pulmonary artery calcification in association with TTTS

Case report The twins were born at 34⁺4 weeks of gestation by elective caesarean in good condition. There was an antenatal diagnosis of TTTS, treated with laser ablation of the recipient twin (Twin 1). Twin 1 had an antenatal diagnosis of pulmonary stenosis and pericardial effusion.

Echocardiogram done postnatally in the first day of life showed a structurally normal heart with pericardial effusion. The aortic valve was bicuspid with an echogenic post aortic valve stenosis and the ascending aorta. Pulmonary valve was echogenic with a clear post pulmonary valve stenosis a post stenotic dilatation. The pulmonary arteries looked small bilaterally with a flow velocity of approximately 1.7 m/sec. Serial echocardiogram in the neonatal unit showed no increase in the velocity across the great vessels. Serum calcium levels were within normal limits. An abdominal ultrasound showed no evidence of calcification or stenosis of renal arteries or the splanchnic circulation.

Baby was closely monitored on the neonatal unit and was discharged on day 21 of life with a good weight gain and follow up with the cardiologists.

Conclusion Calcification of the great vessels is an uncommon finding in TTTS and is thought to be secondary to the excessive volume overload in the recipient twin. Antenatal ultrasonography is useful in identifying hyperechogenicity of vessel walls. Serial monitoring during pregnancy and postnatal life is imperative to reduce morbidity and mortality associated with this syndrome.

International Child Health Group

G256

VALIDATION OF TRANSCUTANEOUS BILIRUBINOMETRY AS A METHOD TO MONITOR NEWBORN JAUNDICE IN A LOW INCOME COUNTRY

¹S Johnson, ¹C Marseille, ¹P Toussaint, ¹C Hill, ²V Vasu, ¹C Battersby. ¹Neonatal Unit, Hopital de la Conception Baptiste d'Haiti (HCBH), Hope Health Action Charity (NGO), Cap Haïtien, Haiti; ²Neonatal Unit, William Harvey Hospital, Ashford, UK

10.1136/archdischild-2018-rcpch.249

Background and aims Kernicterus is a significant problem in low income countries (LICs) and measurement of total serum bilirubin (TSB) is often restricted by cost or lack of laboratory facilities. Near patient testing through the use of transcutaneous bilirubinometry (TcB) may be of benefit in LICs. Therefore, the aim of this study was to determine agreement between (TcB) and TSB in a LIC (Haiti).

Methods With approval the Ministry of Health, we conducted a single centre prospective study (February-May 2017) in a NGO funded neonatal unit in northern Haiti. Babies with clinically detected jaundice, <7 days of age were eligible for inclusion. To enable serial TcB measurements during phototherapy, a strip of black tape was placed across the babies' sternum. Once clinical jaundice was detected, a parallel TcB measurement using a TcB bilirubinometer (JM-103) and a blood TSB sample for laboratory testing were obtained. Further management was initiated based upon the UK NICE threshold bilirubin values. A Bland-Altman difference plot was used to measure agreement between TcB and TSB.

Results Paired TcB/TSB measurements were obtained from 35 infants. 19 (54.3%) were male; 23 (65.7%) were ≥35 weeks,

12 (34.3%) <35 weeks gestation. All babies were ≤5 days old and 32 (91.4%) were receiving phototherapy. A Bland-Altman plot of TcB versus TSB demonstrated good agreement between the methods with only one TcB/TSB pair falling outside of the mean difference 95% confidence (CI) interval (Bland-Altman plot available). Overall, TcB tended to overestimate bilirubin in comparison to TSB [mean difference 11.1 μmol/L (95% CI -10.2, 32.5)]. However, at higher bilirubin levels (>200 μmol/L), TcB tended to underestimate bilirubin in comparison to TSB and the magnitude of the difference increased. The mean difference between TcB and TSB was increased in babies <35 weeks [16.4 μmol/L (95% CI: 24.8 to 57.5)] compared to babies >35 weeks 8.4 μmol/L (95% CI -18.5, 35.3).

Conclusion Our data indicate good agreement between TcB and TSB levels in Haitian newborns receiving phototherapy. Implementing TcB measurement for the management of newborn jaundice is both feasible and convenient as an alternative to laboratory TSB measurements in preterm and term babies during phototherapy in a LIC setting.

G257

EVALUATION OF 'TRY' AN ALGORITHM FOR NEONATAL CPAP IN LOW-INCOME SETTINGS

^{1,2}C Crehan, ³T Colbourn, ¹M Heys, ⁴E Molyneux. ¹Great Ormond Street Institute for Child Health, University College London, UK; ²Paediatric Department, North Middlesex Hospital NHS trust, London, UK; ³Institute for Global Health, University College London, UK; ⁴Paediatric Department, College of Medicine, Blantyre, Malawi

10.1136/archdischild-2018-rcpch.250

Background Non-invasive respiratory support using bubble continuous positive airway pressure (bCPAP) is useful in treating babies with respiratory distress syndrome. Despite its proven clinical and cost effectiveness, implementation is hampered by inappropriate administration of bCPAP in low-resource settings. A clinical algorithm – 'TRY' (based on Tone: good, Respiratory distress: Yes: heart rate above 100 beats/min) has been developed to correctly identify which newborns would benefit from bCPAP in a teaching hospital in Malawi.

Objective To evaluate the reliability, sensitivity and specificity of TRY when employed by nurses in a Malawian district hospital.

Methods Nursing staff in a Malawian district hospital neonatal unit were asked, over a 2 month period, to complete TRY assessments for every newly admitted baby with the inclusion criteria: clinical evidence of respiratory distress and/or birth weight less than 1.3 kg. A visiting paediatrician, blinded to the nurses' assessments, concurrently assessed each baby providing both a TRY assessment and a clinical decision regarding the need for CPAP administration. Interrater reliability was calculated comparing nursing and paediatrician TRY assessment outcomes. Sensitivity and specificity were estimated comparing nurse TRY assessments against the paediatrician's clinical decision.

Results 287 infants were admitted during the study period; 145 (51%) met the inclusion criteria and of these, 57 (39%) received joint assessments. The inter-rater reliability was high, (kappa(κ) 0.822). Sensitivity and specificity were 92% and 96% respectively.

Conclusions District hospital nurses, using the TRY-CPAP algorithm, reliably identify babies that might benefit from bCPAP and thus improve its effective implementation.