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

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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 of 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 underestimate 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 8.4µmol/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

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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(%) 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.
Aims Epilepsy affects three times as many children in African countries compared to higher income settings. Unfortunately, epilepsy clinics in Africa countries are poorly attended even when there is free provision of care. To reduce this treatment gap we introduced low cost rural epilepsy clinics in Western Uganda. The aim of this study was to evaluate their effectiveness.

Methods Pre-intervention attendance and follow-up at hospital based clinics was audited for three month periods. The intervention involved a new guideline written by the medical, pharmaceutical and community rehabilitation staff at the regional hospital, providing information about the locally available medications, how to start medication and monitor side effects. In addition, clinics local to the hospital were introduced and then satellite clinics in four rural locations were introduced. The cost of these extra clinics, attendance and follow-up at the clinics were audited over nine months post intervention and re-audited six years after the intervention. Cost analyses excluded medication costs as medications were provided by the government to the hospital and community clinics without charge. Clinic costs did not change depending on patient attendance.

Results One patient attended the hospital clinic each month. Post intervention, at the clinics local to the hospital a median of 47 patients (range 25 to 85) per clinic; the cost per clinic was £34. Satellite clinic attendance post intervention was significantly higher than locally held clinics (p=0.004).

Conclusion Rural epilepsy clinics away from the hospital were associated with higher attendance which was sustained six years post intervention. This was achieved at relatively low cost.

Aims To assess the impact of a national programme in paediatric secondary care, to introduce ETAT protocols and train nursing staff to lead emergency management.

Methods Within a wider strategy to reduce child mortality, the Sierra Leone Ministry of Health and Sanitation engaged WHO and RCPCH to introduce WHO Emergency Triage Assessment and Treatment (ETAT) protocols to all district hospitals. Two clinical mentors (one Sierra Leonean, one UK/international) were placed at each hospital for six months, and delivered a three-month teaching programme with a written and practical examination, as well as hands-on clinical mentorship. Upon passing the examination, nurses were awarded the right to assess, prescribe for, and treat emergency paediatric cases.

The mentors collected treatment data each day on children admitted the previous day, and followed each child to record their discharge outcome. This programme monitoring data was analysed to identify compliance with clinical protocols, and to calculate mortality rates. The programme delivery period was split into seven four-week blocks, and compliance rates and mortality rates were calculated for each four-week period.

Results We analysed monitoring data from three regional hospitals in the first phase of roll-out (table 1). The combined mortality rate across the three hospitals fell from 15% in the first four-week period, to 4% in the final period. This fall was accompanied by improvements in key areas of compliance with WHO ETAT standards.

Conclusion This study suggests that implementation of ETAT protocols and delivery of improved quality of care and decreased mortality may be achievable with an effective and cost-efficient nurse-led model for emergency paediatric care in low-resource settings.