average BP does not change significantly over time. However, women who will develop preclampsia have a different pattern of BP measurements compared to others between the first and third hours.

POINT OF CARE WHITE CELL COUNT AND DIFFERENTIAL: PROSPECTIVE TECHNICAL ACCURACY IN A NEONATAL NURSERY POPULATION

Krystle Landerc, Ivana Goluza2, Sam Der Sarkissian2, Ian Wright1

1NSW Health, the 2Wollongong Hospital, NSW, the 3University of Wollongong, University of Newcastle

Background: Point of Care (POC) testing can be a useful clinical tool. A white cell count (wcc) differential POC device (HemoCue®) has been shown to be accurate in older children and adults. It has not been validated in neonates, where immature cells may theoretically alter results.

Methods: Routine full blood count samples from 66 admitted babies in our metropolitan neonatal nursery were immediately tested in parallel on the POC device. Mean birth gestational age was 33+1 weeks (range 26-39+) with median sampling at 15 days (range 0-92). POC operation and laboratory results were executed masked to the other method. Comparisons used Bland-Altman (mean and SD), Spearman Rank correlation and Wilcoxon as appropriate.

Results: POC and lab total wcc, neutrophils and lymphocytes were highly correlated (p < 0.0001). Mean Bland-Altman differences were small: total wcc 0.4 10⁹/L (+/− 2SD 1.1 to −1.9), neutrophils 1.2 10⁹/L (+/− 2SD 2.7 to −0.3), lymphocytes 0.7 10⁹/L (+/− 2SD 1.3 to −2.7). Whilst statistically significant (p < 0.0001) these small absolute differences were clinically insignificant. Eosinophils were also significantly correlated; monocytes and basophils were not. 24% of original POC attempts resulted in error readings compared to 7% of laboratory samples being unsuitable for analysis.

Conclusions: The POC device is highly correlated and in clinical agreement with laboratory values for total wcc, neutrophils and lymphocytes in this population. Consideration should be given to testing clinical utility algorithms for this methodology, as well as extending these studies to younger and sicker neonatal populations.

INVESTIGATING UNEXPLAINED STILLBIRTH AND IMPROVING CARE (INUSTIC) – A RETROSPECTIVE STUDY AT THE ROYAL BRISBANE AND WOMEN’S HOSPITAL

Christopher Lehner1*, Amanda Harry2, Anita Pelecanos3, Lauren Wilson2, Kate Saunders2, Renuka Sekar2

1Gold Coast University Hospital, the 2Royal Brisbane and Women’s Hospital, the 3QIMR Berghofer Medical Research Institute

Introduction: In Australia, the stillbirth rate is 5.6 per 1000 births1. The Perinatal Society of Australia and New Zealand (PSANZ) developed guidelines to standardise investigation and classification of causes of stillbirths.

Methods: The aim of this study was to characterise care provided in comparison to the PSANZ recommendations to investigate stillbirth. Secondary outcomes were to report on known risk factors associated with unexplained stillbirths.

Medical records of 515 stillbirths at the Royal Brisbane and Women’s Hospital between July 2004 and September 2014 were reviewed. 192 terminations of pregnancy, 95 stillbirths secondary to antenatally identified causes and 35 congenital anomalies were excluded. 170 stillbirths were considered unexplained and eligible for data extraction.

Results: Stillbirth rate for this centre was 11.2 per 1000 births. The median gestational age was 29.6 (23.5-36.9) weeks with a median weight of 925 g (433-2500 g).

After reviewing investigations and applying the PSANZ classification, only 75 cases (14.6%) remained unexplained.

High rates of bereavement support (99%), autopsy (47.3%) and placental histology (98.8%) were identified, however a poor overall completion rate of recommended stillbirth investigations (0.6%) was noted.

Known risk factors such as maternal age >35 yrs (18.9%), increased BMI (median 27.1 kg/m²), smoking (26%), intrauterine growth restriction (18.9%) and reduced fetal movements (11.2%) were consistent with international findings.

Conclusions: The strengths identified included the high rates of bereavement support, autopsy and placental histology to investigate cause of death. Many of the known risk factors in this analysis were consistent with international findings.


NEONATAL HYPERGLYCAEMIA AND VISUAL OUTCOMES AT 7 YEARS OF AGE

Myra Leung1*, Tanya Poppe1, Anna Tottman2, Benjamin Thompson1, Joanna Black1, Jane Harding4, Frank Bloomfield5, Jane Alsweiler6

1University of Auckland, the 2Liggins Institute, University of Auckland, the 3University of Waterloo, the 4University of Auckland, Liggins Institute, the 5Liggins Institute - University of Auckland, the 6University of Auckland

Background: Children born very preterm are at risk of both neonatal hyperglycaemia and poor visual outcomes. This study aimed to investigate the relationship between neonatal hyperglycaemia and visual outcomes in seven-year old children born preterm.

Method: Seven-year old children born at <30 weeks’ gestational age (GA) or <1500 g birth weight (BW) had their visual function assessed. Children (cases) with neonatal hyperglycaemia (two consecutive measures of blood glucose concentration >8.5 mmol.L⁻¹ at least 4 hours apart) were matched (including sex, GA and BW) with controls. Good visual outcome was defined as visual acuity (VA) <0.3logMar in the better eye, absence of strabismus, TNO stereoacuity <240 seconds of arc and spherical equivalent refractive error −0.50 to +2.00D (no optical correction required). Data are reported as medians (interquartile range), means (standard deviations) and percentages. Student’s t-test and Fisher’s exact test were used for statistical analyses.

Results: Between 2012 and 2016, 111 children were assessed (cases, n = 57 vs controls, n = 54: GA 25 (25−27) v 26 (26−28) weeks; birthweight: 790 (700−863) v 988 (879−1130) g). There