

ABSTRACT

Key words; Umbilical cord blood gas, Birth asphyxia, Hypoxic ischaemic encephalopathy, Cerebral palsy, Obstetric litigation.

Introduction: Obstetric litigation has increased substantially in South Africa, a large proportion of litigation is due to alleged birth asphyxia in brain damaged children. Umbilical cord blood gas (CBG) at birth is an accurate and objective assessment of the fetal acid-base status immediately before birth and may assist in the defence of these cases. The South African Society of Obstetricians and Gynaecologists (SASOG) recommends routine CBG at birth. We investigated the feasibility of routine CBG at birth in a busy tertiary academic hospital.

Methods: Doctors and midwives were trained on sampling, analysis and interpretation of CBG and were encouraged to do routine CBG on all deliveries. A point of care blood gas machine was used to analyse the cord blood. Participants were prospectively followed until discharge for short term maternal and neonatal outcomes.

Results: There were 1665 live births that were eligible for CBG, 218 (13%) had CBG and 207 were included in the study. There were 191 (96%) singletons, seven pairs of twins (3.5%) and one set of triplets. Of these, 53 (25.6%) had elective Caesarean sections (CS), 90 (43.5%) had emergency CS, 63 (30.4%) had vaginal deliveries and one had an assisted vaginal delivery. Most, 161 (77.8%) were at term gestation. No neonatal resuscitation was required in 134 (64.7%), while 59 (28.5%) neonates were admitted to the Transitional Unit and 14 (6.8%) to NICU. Abnormal arterial or venous CBG were significantly associated with neonatal resuscitation. Problems were encountered with sampling 5.8%, machine calibration 2.9% and lack of supplies 1.5%. Assessment of the quality of the CBG reports revealed minor issues like incorrect labelling and time recording in 66% of instances. There were no issues in 31 (15%) of the CBG, but there was only a venous sample or similar arterial and venous CBG results in 47(23%) of the cases.

Conclusion: Routine CBG is not feasible in our setting. Departmental guidelines and training on CBG are required. Selective sampling and analysis might be the most appropriate policy to adapt in a busy tertiary unit. Larger studies on the cost effectiveness and feasibility of selective CBG analysis in our setting and in the regional hospitals and clinics are needed to guide policy.