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Anaesthesia for the pre-term parturient: a local survey of anaesthetic and obstetric practice

Dr Samuel Nava, Dr Lesley Jordan, Dr Timothy Cominos
Royal United Hospitals Bath NHS Foundation Trust, Bath, UK

Introduction

Pre-term live births below 37+0 weeks accounted for 7.8% of all births in England and Wales in 2019[1]. Improving outcomes for pre-term infants is a major driver nationally and requires a co-ordinated multidisciplinary team response. Prematurity has significant implications for obstetric and neonatal care, however the impact on anaesthetic technique for caesarean section or assisted delivery is not so clear. We identified a lack of readily available educational material and undertook a survey of anaesthetists and obstetricians to evaluate understanding of prematurity and awareness of any impact on anaesthetic technique or wider impact on patient care.

Methods

We conducted an electronic anonymous local survey inviting anaesthetists and obstetricians of different grades working in a district general hospital maternity unit with over 4'500 annual births. Questions assessed responder knowledge of the prevalence of pre-term births, modifications to anaesthetic technique for caesarean section or assisted delivery, wider implications for obstetric and neonatal care and knowledge of our regional perinatal care bundle for premature infants, and any implications for anaesthesia

Results

27 responses were received, 17 from anaesthetists and 10 from obstetricians.

Only 29% of anaesthetists report that prematurity makes a significant impact on their practice. Most anaesthetists (88%) do not routinely change their intrathecal 0.5% heavy bupivicaine dose due to prematurity alone and nearly all (94%) of the anaesthetists would give 2.5mls as a standard dose.

By comparison, 100% of obstetricians report that prematurity has a significant impact on their decision-making and caesarean section technique. Specific examples included preparing for a potentially difficult extraction and delivery to a mobile warming plate to facilitate delayed cord clamping. Only 24% of anaesthetists anticipate a potentially difficult extraction and ensure sublingual glyceryl trinitrate is immediately available to facilitate delivery if required.

100% of obstetricians are aware of the local neonatal care bundle in contrast to only 41% of anaesthetists and all anaesthetists reported they would like to learn more about prematurity.

Discussion

Preterm birth is the most significant factor associated with neonatal mortality and morbidity in the UK[2]. Our survey demonstrates that although all obstetricians report a significant change of technique and decision making for pre-term birth, locally the majority of anaesthetists are unfamiliar what these differences may be. We believe all anaesthetists should be aware of the impact of prematurity.

Our unit has implemented the 'PERIPrem' bundle of care[3], consisting of a number of interventions in the period prior to and after delivery of pre-term infants, which have been evidenced to significantly improve neonatal outcomes[4]. These interventions are becoming increasingly common nationally and anaesthetists should be aware of potential secondary maternal complications of these interventions, such as hyperglycaemia due to corticosteroid administration and magnesium toxicity. The anaesthetist should ensure that additional room is available in theatre to allow delivery onto a mobile warming plate to facilitate delayed cord clamping.

In addition it is vitally important to consider the wider emotional environment in theatre. Parental and staff anxiety is likely to be high as pre-term birth is often unexpected and the anaesthetist can have a key role in reassuring parents.

As a result of our survey we are planning some simple education to raise awareness of the important differences for preterm baby delivery and establish standard processes in the operating theatres. With a growing focus on multi-disciplinary obstetric care, we believe anaesthetists can play a role in the care for pre-term parturients beyond 'routine' anaesthetic practice. We are also interested in performing a national survey to gain further information on practices in other areas.

References

1.Office of National Statistics Birth characteristics in England and Wales: 2019
2.Office of National Statistics Child and infant mortality in England and Wales: 2018
3.PERIPrem Care Bundle : West of England Academic Health Sciences Network. Available from: https://www.weahsn.net/our-work/transforming-services-and-systems/periprem/
4.National Institute of Health and Care Excellence (NICE) (2015) Preterm labour and birth (NG25). Available at: https://www.nice.org.uk/guidance/ng25