P24

A REVIEW OF ALL PERIOPERATIVE CARDIAC ARRESTS AT A BUSY PAEDIATRIC TERTIARY/QUATERNARY CENTRE OVER A 1-YEAR PERIOD

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Introductions and aims:

UK hospitals administer approximately 500,000 anaesthetics to infants, children and adolescents every year [1]; however, the complexity of this patient group and the level of risk can vary significantly between centres. The mandatory data collection required for the NAP7 audit project enabled a busy paediatric tertiary/quaternary centre to specifically review the degree of risk associated with anaesthetising it's specific cohort of patients that have rare and complex conditions.

The aim of this review was to determine the number of perioperative cardiac arrests that occurred in this high-risk cohort; in the time period from either the WHO sign-in or first hands-on contact with a patient to 24-hours after handover to recovery/critical care, or after discharge from the hospital [2]. The data collected could then be used to review centre specific processes/pathways and training.

Methods:

This is a prospective review of a single centre's data from 16th June 2021 to 15th June 2022. The inclusion criteria was five or more chest compressions, and/or defibrillation in a patient having a procedure under the care of an anaesthetist; which included cases requiring general anaesthesia, regional anaesthesia/analgesia, sedation, local anaesthesia or monitored anaesthesia care [2]. Patients were identified intra-operatively by the anaesthetists giving the anaesthetic, and post-operatively by the PICU/CICU/NICU teams. The data collectors used electronic patient records (EPR) to determine if the patient met the inclusion criteria, and to establish the pre, intra and/or post-operative factors that contributed to the perioperative cardiac arrest.

Results:

In a single centre over a 1-year period 16,173 patients aged 0-18 years old underwent a procedure under the care of an anaesthetist, with 7,629 under the age of 5. During this time frame 24 perioperative cardiac arrests were reported, and analysed in detail. The most significant findings were; all were ASA grade 3 or above, the NCEPOD classification of intervention was equally split amongst the 4 groups, 17 of the patients were <1 years old (only 15% of the total patient cohort),

10 out of the 24 cases were in theatre, the most high-risk patient cohort were those undergoing complex cardiac surgery, and 5 died within the 24-hour inclusion criteria (80% in theatre).

Discussion and conclusion:

This review highlights that in a single centre routinely providing highly specialised services to a large cohort of high-risk patients with rare, life limiting/threatening complex conditions, 0.15% of the patients sustained a perioperative cardiac arrest in a 1-year period.

Infants and neonates pose a higher risk for perioperative cardiac arrests, which must be reflected in training and service delivery. The majority of these cases were rare and known as high risk. Creation of a national database and agreed benchmarking of care for such cases should be future research priorities.

References

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