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STANDARDS OF MONITORING DURING PAEDIATRIC ANAESTHESIA: A COMPLETE AUDIT CYCLE

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Background/Context

A recent publication by the Association of Anaesthetists on the 'Recommendations for standards of monitoring during anaesthesia and recovery 2021' highlights minimum monitoring standards for all patients undergoing anaesthesia.(1) Using these guidelines as a benchmark we undertook an audit to review our monitoring standards at a territory paediatric unit.

Problem

Total Intravenous Anaesthesia (TIVA) is increasing popular within paediatric practice as it can reduce the incidence of both post op nausea and vomiting and emergence delirium. Processed EEG (pEEG) monitoring should be used when TIVA is administered with neuromuscular blockade to reduce the risk of accidental awareness, and ideally applied before induction of anaesthesia. Quantitative neuromuscular monitoring should be used when neuromuscular drugs are administered. Residual neuromuscular blockade is an important issue and may lead to harmful consequences such as delayed recovery and aspiration.

Strategy for change

Two audit cycles were completed with 44 and 37 anaesthetic charts audited per cycle. A survey was sent out to all anaesthetists in the department. Results of the survey and first audit cycle were discussed at a departmental audit meeting, this presentation included a review of the guidelines and our current practice.

Measure of improvement

100% of charts audited using TIVA with neuromuscular blockade had used pEEG monitoring. Survey results indicated that this was normally applied after induction of anaesthesia. Following the initiation of a simple prompt beside the anaesthetic machine a significant increase in use of quantitative neuromuscular monitoring was demonstrated between the first and second audit cycles (15% to 53%). There was also a notable increase in the use of neuromuscular reversal agents used between the audit cycles (45% to 76%).

Lessons learnt

As acknowledged in the guidelines paediatric patients may present their own challenges and it may not be feasible to attach all monitoring before induction, however monitors should be applied as soon as reasonably possible and the same standards of monitoring should apply to paediatrics as they do to adults.

Message for others

We have demonstrated that following a review of our practice a simple intervention has significantly increased the amount of quantitative neuromuscular monitoring being used. With the increasing use of TIVA in paediatric practice we would strongly encourage an audit of monitoring standards within each department.

Reference

1. Klein, A.A., Meek, T., Allcock, E., Cook, T.M., Mincher, N., Morris, C., Nimmo, A.F., Pandit, J.J., Pawa, A., Rodney, G., Sheraton, T. and Young, P. (2021), Recommendations for standards of monitoring during anaesthesia and recovery 2021. *Anaesthesia*, 76: 1212-1223