44599 - THE EFFECT OF PROPOFOL DOSE ON MYOCARDIAL REPOLARIZATION IN CHILDREN

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Introduction: Acquired QT interval prolongation on the ECG is commonly drug-induced, and is traditionally associated with torsades de pointes (TdP). A better predictor of TdP is the time interval between the peak and the end of the T wave (Tp-e)(1). Sevoflurane prolongs the corrected QT interval (QTc), although the Tp-e remains unaffected(2). In contrast, target controlled infusion of propofol at 3 µg/mL has no effect on QTc or Tp-e. This plasma concentration of propofol is at the extreme lower end of the range for surgical anesthesia. The purpose of this randomised double-blind clinical study was to investigate the dose-response relationship between propofol, QTc and Tp-e in a range of doses clinically relevant for surgical anesthesia.

Methods: Written ethics committee approval and consent was obtained. 60 healthy unpremedicated children, aged 3-10 years, were recruited. Subjects were randomised to receive target controlled infusions of propofol, to achieve one of three plasma concentrations: 3µg/mL, 4.5µg/mL and 6µg/mL. A pre-operative 12 lead ECG was performed and repeated 5 minutes post induction. Two investigators, blinded to the group allocation and to the timing of the ECG traces, independently measured QTc and Tp-e within and between each group. Paired t-tests were used to compare QTc and Tp-e within groups. One way analysis of variance was used for inter-group analysis. The primary outcome measure was a change of >25msec in Tp-e both within and between groups.

	Pre-op	Intra-op	p value
3 µg/mL			
QTc lead II	407	406	0.78
QTc lead V5	406	407	0.8
Tp-e lead II	58.9	56.9	0.51
Tp-e lead V5	59.3	60	0.85
4.5 µg/mL			
QTc lead II	402	403	0.82
QTc lead V5	412	401	0.12
Tp-e lead II	57.5	55.1	0.37
Tp-e lead V5	61.4	63.1	0.53
6 µg/mL			
QTc lead II	404	407	0.52
QTc lead V5	406	401	0.29
Tp-e lead II	62.2	58.6	0.24
Tp-e lead V5	58.2	53.9	0.13

Results: ECG recordings were obtained in 52 children. There were no demographic or ECG differences at baseline. There were no differences in QTc or Tp-e post induction within or between the 3 different groups (see table).

Discussion: Propofol has no effect on myocardial repolarisation in healthy children at clinically relevant doses. This suggests that propofol would be a rational choice for children with a pre-existing repolarization abnormality.

REFERENCES

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