

An Audit of Patterns of Inhalational Anesthetic Use During Pediatric Anesthesia

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Background

Our department has a long interest in reducing environmental impact by rationalising inhalational anaesthetic agent use. In 2019 we performed an audit of gas use in paediatric anaesthesia. Earlier this year we repeated and expanded this audit with two key aims

1. Provide a detailed analysis of sevoflurane and nitrous oxide consumption during paediatric gas inductions and maintenance
2. Explore the effect on consumption by using a separate machine in the anaesthetic bay for induction

Methods

- Jan-March 2021.
- Christchurch, Aotearoa New Zealand.
- Gas consumption from machine logs.
- Patients < 13 years
- OR machines GE Aysis with end-tidal control, anaesthetic bay machines GE Avance

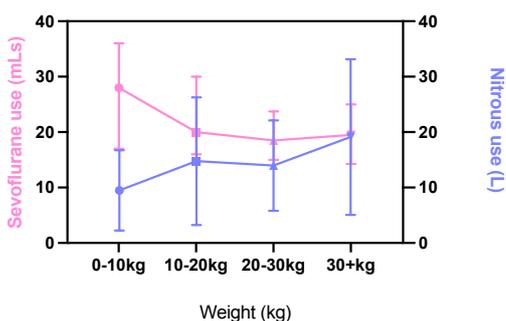
Results

205 cases

71% elective, 29% acute

Median duration 61 minutes

Median age gas inductions 4 (IQR 1.5-6), total intravenous anaesthesia 12 (10-14)



Gas consumptions	Sevoflurane 2019 ml (IQR)	Sevoflurane 2021 ml (IQR)	N2O 2021 L (IQR)
All cases (n=205)	19 (13-24)	17 (11-23.5)	10.7 (5.4-17.4)
Gas induction and maintenance (n=130)	22 (16-26)	20 (16-29.3)	12.4 (8.3-20)
Propofol induction and maintenance (n=18)		0 (0-5.5)	0 (0-7.1)
Gas induction and propofol maintenance (n=37)		10 (8-13)	12.5 (9.8-16.6)
Propofol induction and gas maintenance (n=20)	11 (7-17)	13 (10-16.8)	0 (0-0)

Conclusions

We continue to use a high proportion of gas inductions in paediatrics.

Confirms previous findings that over half of anaesthetic gases are used during the induction phase.

There is a tendency to use more sevoflurane in smaller children.

Contrary to previous belief, use of two anaesthetic machines does not significantly increase anaesthetic gas use.