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## NAUSEA AND VOMITING IN CHILDREN REQUIRING GENERAL ANAESTHESIA FOR MRI

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### **Introduction and aims:**

Children requiring anaesthesia for Magnetic Resonance Imaging (MRI) often require sedation or general anaesthesia due to the need to lie still during image generation, which can last an average of 15-90 minutes depending on the part of the body being imaged. At Frimley Park Hospital (FPH), a district general hospital which facilitates a weekly paediatric MRI list, general anaesthesia is maintained with an Isoflurane vaporiser as part of an MRI safe anaesthetic machine.

Nausea and vomiting is a common side-effect of volatile anaesthetic agents, with an increased incidence in the paediatric population compared to adults. Children over 5 years have a 34-50% overall risk of postoperative nausea and vomiting.<sup>2</sup> Dehydration, poor nutrition, poor experience for the care-giver and the child all constitute adverse outcomes of nausea and vomiting.<sup>2</sup>

We aimed to evaluate the incidence of nausea and vomiting amongst children requiring anaesthesia for MRI at FPH, and adjust our service as necessary.

### **Methods:**

Data was collected on consecutive paediatric cases requiring anaesthesia for MRI between April and December 2022. In all cases, isoflurane inhalation was used for the maintenance of anaesthesia. Antiemetics were not routinely given as prophylaxis. Following prior consent, caregivers were contacted by phone post-procedure and asked about the occurrence of nausea and/or vomiting, whether the child was able to eat in hospital prior to discharge, and whether antiemetics were required.

### **Results:**

The care-givers of 52 patients were contacted, and 50 responses were collected.

6 (12%) caregivers reported nausea and/or vomiting

2 patients experienced significant emesis lasting over 12 hours, and the remaining 4 experienced mild nausea only.

Only 2 cases required antiemetics in recovery after the procedure

### **Discussion and conclusion:**

The occurrence of nausea and vomiting in this analysis (12% of cases) is below the reported values of post-operative nausea & vomiting (PONV) in the general paediatric population, and only 4% of the cases in this report were significant. A recent study of sedation in paediatric MRI found PONV

rates to be as low as 6% and consideration should be made for absence of surgical stimulation in children requiring anaesthesia for MRI, and the reduction in anaesthetic risk factors such as opioids.

We would encourage all centres, particularly those that utilise volatile anaesthesia for children requiring MRI (rather than intravenous anaesthesia or sedation) to audit their practice. Lower rates of nausea and vomiting may be anticipated in this cohort and administration of routine antiemetic prophylaxis is not without risk given the possibility of side-effects (including headache, arrhythmia, electrolyte imbalance), medication errors, allergy, and unnecessary cost.<sup>4</sup>

Further work would include an analysis of nausea and vomiting amongst children who receive sedation or intravenous anaesthesia for MRI.

#### References

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