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REVEW OF THE FREQUENCY AND SEVERITY OF EMERGENCIES IN THE RECOVERY ROOM OF A TERTIARY PAEDIATRIC HOSPITAL WITH NURSE LED (FULLY AWAKE) EXTUBATIONS

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Introduction and aims

Nurse-led extubation is well established in the intensive care setting(1,2). Nurse-led extubation has also been successfully introduced in the adult post-anaesthetic recovery setting(3). The use of nurse-led extubation in the paediatric post-anaesthetic area has been cited as a likely future trend(4). However, at the time of this study we believe the authors' department is the only in Ireland utilising this protocol, As its use and safety are poorly documented, we aimed to assess the frequency and nature of emergencies in the recovery room of our busy tertiary paediatric hospital with nurse-led (fully awake) extubations.

Methods

We retrospectively reviewed emergency-bell activations in the post anaesthetic recovery area of our tertiary paediatric hospital over 12 months. Anonymised patient demographics and clinical details were collected, including age, procedure, airway device used, length of surgery, and the use of opioids, muscle relaxant and reversal agent. The details of the emergencies, further management and time spent in recovery were also recorded.

Results

A total of 3408 paediatric patients were managed in the recovery area over 12 months (2021), the majority of whom arrived intubated. The emergency bell was activated 14 times. All the patient emergencies were respiratory in nature; 71% desaturated. 42% had endotracheal tubes (ETT) in situ at the time, 42% had been extubated, and the remainder were not clearly recorded. The emergencies were documented as laryngospasm (21%), biting on ETT (7%), apnoea (42%), bronchospasm (14%), excessive secretions (7%) and unrecorded (7%). Management included positive pressure (PEEP or CPAP) (78%), propofol (21%), use of oropharyngeal airway (21%) and reintubation (7%). All emergencies had received sevoflurane, 50% had intravenous morphine, and 85% had intravenous rocuronium reversed with sugammadex. All were elective cases and airway management was deemed "easy" at induction. Mean surgery time was 53 mins, and recovery time 45 mins. 35% had a history of prematurity <28/40weeks. Records of the emergency were made by nursing staff in 92% of cases and medical staff additionally in only 14% of cases.

Discussion and conclusion

Overall, nurse-led extubations in PACU appear safe - the emergency bell was activated in only 0.4% of cases. All were respiratory emergencies and responded quickly to management, making full recovery, and fit for discharge to the ward after a mean time of 45 minutes in recovery. A history of prematurity may be a risk factor for airway emergencies post-extubation. The use of TIVA (total intravenous anaesthesia) is widespread within this department, thus the absence of TIVA emergency cases may indicate it is protective. However, further studies would be required to ascertain these factors. Record keeping of these emergencies, particularly by the medical staff could be improved.

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