P44 ALFENTANIL FOR ANALGESIA AND SEDATION IN CHILDREN'S CRITICAL CARE

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Introduction Safe and effective sedation and analgesia in children's critical care is a complex area of medicines use. Analgesia and sedation are needed to treat any pain during a critical care stay, and also to facilitate the delivery of invasive interventions such as mechanical ventilation and intravenous access devices.

Strong opioids are a group of medicines often used to achieve good sedation and pain relief. In adult critical care, alfentanyl has become the opioid of choice as it reduces the length of stay.[1 2] This could be attributed to the pharmacokinetic profile of alfentanyl. Alfentanyl does not distribute widely into body tissue like fentanyl, and is not dependent on kidney function to be removed from the body like morphine or oxycodone.[3] Most children's critical care units in the UK use either morphine or fentanyl.[4] The aim of this case report is to describe the use of alfentanil in a complex patient and assess the outcome.

Situation The patient was a 2-month-old (weight = 2.6kg) who had a truncus arteriosus repair at nine weeks of age. The initial postoperative course was complicated by high pulmonary pressures and heart failure that required a further operation. Following this the patient had cardiovascular instability and needed four days of extracorporeal membrane oxygenation (ECMO) support. The clinical team felt that adequate sedation was essential to keeping the patient's blood pressure under control, and to avoid exacerbating heart failure that may have required another period of ECMO support. Sedation had already been titrated using a fentanyl infusion at 7 microgram/kg/hour, clonidine infusion at 2 microgram/kg/hour and chloral hydrate rectal 200 mg/kg/day in divided doses. Midazolam is not used after cardiac surgery at this unit due to concerns about cardiovascular side effects. Unfortunately, the patient was not on enteral feeds and so sedation could not be given via this route. The patient had reduced urine output and the creatinine trend showed an acute kidney injury. The patient's oxygen saturations dropped when they became agitated during routine cares and procedures. As fentanyl was not deemed to be working this was stopped and alfentanil started at 30 microgram/kg/hour. The dose was quickly escalated to the maximum recommended of 120 microgram/kg/hour. Unfortunately, little improvement was seen, and ultimately a ketamine infusion was started which proved to be effective. Eventually, enteral feeding was established, and the addition of promethazine helped sedation and the alfentanil was converted to morphine.

Lesson Learned This case showed that there was little benefit from substituting fentanyl for alfentanil in a complex patient during a prolonged hospital admission. If fentanyl is to demonstrate the benefits seen in adult critical care, then it should be studied during the early critical care period. There are many unanswered questions about sedation in children's critical care. These include whether any medicines are more effective than others, how to escalate sedation in difficult to manage patients, and whether there is any benefit to cycling sedative agents.

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P45 MPHARM UNDERGRADUATE KNOWLEDGE, UNDERSTANDING AND PERCEPTIONS OF COVERT ADMINISTRATION OF MEDICINES IN CHILDREN

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Introduction Covert medication administration is an ongoing practice that occurs among some patient groups, including geriatric, psychiatric and paediatric populations. The Mental Capacity Act (MCA) 2005 is the current legislation which relates to the practice of covert medication administration and applies to people aged 16 and over.[1] Gillick competence applies to children under the age of 12 and is used to determine whether the child has capacity to give consent to their own medical treatment without parental intervention.[2] Medication non-adherence issues are common in children, and in some circumstances has resulted in the administration of medicine covertly. The practice of covert medication administration poses ethical, legal and clinical risks. These implications must be considered prior to administration. The research aim was to gain a better understanding on the knowledge and perception of MPharm students at Aston Pharmacy School on covert medication administration in children.

Methods Purposive sampling was used, where MPharm students at Aston Pharmacy School were selected to complete online surveys voluntary and anonymously. A total of 50 participants have completed the survey, where 14% were in stage one, 28% were in stage two, 32% were in stage three and 26% were in stage four of the study (2021–2022 academic year). The results obtained include both qualitative and quantitative data, which was imported into excel. Graphs and charts were used to illustrate the findings. The survey questions cover both legal and ethical perspectives of covert medication administration. This has enabled students' opinions and attitudes towards this topic to be explored. The survey was approved by the Pharmacy Protocol and Ethics Research Board (PERB) and pilot testing were conducted before the survey was distributed to students.

Results and Discussion Similarities between responses are seen between MPharm students across different stages of study. The majority of students have a good understanding on MCA 2005 and Gillick competence with regard to consent and capacity. Students appreciated the importance of the role of pharmacists in covert medication administration. Additionally, it was clearly demonstrated that students have a good understanding of the principle of best interests. Ethical perspectives on the practice of covert medication administration among most students are similar across the different stage of study.

Depending on the circumstances, such as in a situation where the patient lacks mental capacity, most students believe that it is ethical to administer medicine covertly. In contrast to a situation where the patient has mental capacity, the majority of students believe that it is unethical for covert medication administration to be used. Furthermore, when applying the use of covert medication administration in children, majority of students believe that it is appropriate to act in the best interests of the child and for parents and carers to administer medicine covertly.

Conclusion This study has enabled the gap in knowledge to be identified, where there is a need for further research which explores the legal and ethical implications of the use of covert medication administration in children.

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P46 REVIEW OF MEDICATIONS/SUPPORTIVE CARE ITEMS PRESCRIBED AT DISCHARGE FOR PAEDIATRIC FRAME PATIENTS

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Aim Paediatric orthopaedic frame patients require a specific list of medications and supportive care items at the point of discharge, to adequately manage pain and to ensure that pin sites are well managed.[1 2] Currently there is no SOP/guideline that states what is needed on discharge, instead relying on doctors, nurses and pharmacists to remember what is needed, meaning there is a risk of omitting essential items. Therefore, this audit was undertaken to review if patients were prescribed essential items and the results used to implement a new guideline/SOP to aid prescribing.

Method As there is no existing guideline/SOP for items required at discharge, standards were defined using a poster previously created to remind doctors, nurses and pharmacists of what to prescribe and supply on discharge. Data was collected from all paediatric frame patients (n=25) admitted to hospital from January 2019 to July 2021. Data was obtained from CareFlow EPR (electronic prescribing software) and JAC (medicine management software) to determine items prescribed and quantities supplied at discharge. Data was collected and analysed using Microsoft Excel.

Results 21/25(84%) of patients were prescribed paracetamol, 23/25(92%) were prescribed tramadol, 20/25(80%) were prescribed diazepam, 23/25(92%) were prescribed an antibiotic and 23/25(92%) were prescribed an appropriate antibiotic at discharge. Of patients prescribed tramadol at discharge, only 4/25(16%) were given a 14 day supply (correct quantity to supply), 15/25(60%) were given a 7 day supply, 1/25(4%) was given a 4 week supply, 1/25(4%) was given a 10 day supply, and 1/25(4%) was given a 5 day supply. 2/25(8%) were not prescribed tramadol. 14/25 (54%) had a request for their GP to continue the supply if needed. Of the patients prescribed diazepam at discharge, 18/25(72%) were prescribed diazepam short-term and only 2/25(8%) had a diazepam wean plan. 5/25(20%) were not prescribed diazepam. 21/25(84%) were prescribed sodium chloride 0.9% sachets, 21/25(84%) were prescribed Allevyn dressings, 22/25(88%) were prescribed chlorhexidine and 21/25(84%) were prescribed alcohol hand gel. Only 1/25(4%) patient was prescribed an NSAID on discharge (usually avoided in frame patients) and no rationale was documented.

Conclusion Although many patients were prescribed appropriate medications and supportive care items at discharge, the audit demonstrated essential items are omitted and that there is great variation in supply of these items. Patients received from as little as a 5-day supply of tramadol to 4 weeks' worth, and just under half of all patients did not have a request for their GP to continue supplying tramadol if needed. If a patient is not seen by their GP within 2 weeks of being discharged, this may lead to patients not being prescribed adequate analgesia. In addition, although many patients were prescribed diazepam at discharge, almost all patients had no clear plan of how to wean diazepam. An SOP/guideline would help standardise frame patients' discharges, ensuring essential medications and supportive care items are not omitted, and ensuring appropriate supplies of these are given on discharge.

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P47 IMPACT OF INCREASED PHARMACIST RESOURCE ON A LEVEL 3 NEONATAL UNIT

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Situation Pharmacists are fundamental components of the neonatal workforce and should have job plans with protected capacity for providing advice and support in neonatal pharmacy.[1] Using Neonatal and Paediatric Pharmacists Group staffing recommendations[2] a shortfall of 0.675 whole time equivalent (wte) band 8a pharmacist resource was identified. A business case was developed and funding was approved to increase the existing neonatal pharmacist's input to the neonatal intensive care unit (NICU) from 0.325 wte to 1 wte from June 2021. The main driver was the number of medication incidents reported, particularly involving gentamicin. Prior to June 2021 the neonatal pharmacist was part of a multi-disciplinary task and finish group established to reduce medication, especially gentamicin, errors. A detailed action plan and a new gentamicin guideline and prescription were developed which included significant training and teaching of both medical and nursing staff. A review of all gentamicin errors reported electronically via Datix from June 2019 to June 2022 was undertaken. A reduction in gentamicin errors was achieved prior to June 2021 and was successfully sustained up to June 2022.

Also feedback was sought from a multi-disciplinary team to ascertain the impact of increased pharmacist resource. The following improvements were identified:

- Sustained improvement in other medication related incidents.
- Bedside teaching for nursing and junior medical staff
- Pharmacist attendance at handover and on ward rounds.
- Co-operative decision making on neonatal treatments in real time with consultants.