AlfredHealth

Adequacy of Discharge Analgesia of Surgical Patients: a patient follow-up study

Georgia Byrne[1,2], Thuy Bui[1,2], Dr Alex Konstantatos[3], Susan Poole[1,2], Daniel O'Brien[1]

1. Pharmacy Department, Alfred Health; 2. Faculty Pharmacy and Pharmaceutical Sciences, Monash University; 3. Acute Pain Services, Alfred Health.

BACKGROUND

Opioid-based analgesia is the foundation of post-surgical pain management.[1] Poorly managed pain has significant negative impacts on recovery.[2] Of significant concern is the emergence of long-term opioid use originating at time of surgery.[2-5] Shortcomings in discharge analgesic planning may contribute to chronic opioid use, leading to dependence, misuse, diversion and overdose.[2-5] There is limited evidence on patterns of analgesia prescribing on surgical discharge, and alignment with patient perception of pain.

AIM

To assess analgesic load of surgical patients at Days 0 and 7 post-discharge, measured by type and dose of opioid analgesic prescribed, including tramadol, and number of analgesic adjuvant agents. Secondary outcomes included patient pain levels and satisfaction of pain management.

METHODS

Setting: Surgical units at The Alfred Hospital, Melbourne, Australia.

Study Design: Observational pilot study involving telephone interviews from July to October 2016. Opt-out consent was used with patients screened for eligibility by ward pharmacists. Patient demographics, medical and surgical history, and discharge analgesia were collected from medical records. Between days 6-13 post-discharge, patients were phoned and asked structured questions about current analgesic load (opioid and adjuvant doses, opioid-related side effects, functional activity scores (FAS; objective score of function level related to pain), pain scores, and satisfaction with pain management using a 5-point ordinal scale.

Inclusion Criteria:

- English speaking
- Inpatient for >48 hours
- Admitted for surgical procedure
- Discharged home without formal assistance (i.e. nursing services)
- Discharged with analgesics (more than paracetamol)
- Self administers medications, or have carer who administers medications

Exclusion Criteria:

- Current or previous intravenous drug use/known drug dependence
- Patients participating in pharmacist opioid de-escalation
- Chronic pain patients continuing baseline pre-admission analgesics at discharge

Data was analysed using descriptive statistics and non-parametric tests. Opioid doses were converted to morphine opioid equivalence (MOE).[6]

RESULTS

Overall, 73 patients were identified to participate, with 28 recruited (Table 1). Analgesic use at Day 0 (discharge) and Day 7 are shown in Figure 2.

Table 1: Patient Demographics

Variable		n=28
Age, median (IQR) years		49 (24-71)
Male, n (%)		13 (46.4%)
Regular Opioid Analgesic Use Prior to Admission, n (%)		6 (21.4)
Length of Stay, median (IQR), days		4 (2-20)
Procedure Duration, median (IQR), h:m		2:02 (0:14-6:24)
Surgical Unit, n (%)	Orthopaedic	10 (35.7)
	Trauma	7 (25)
	Upper Gastrointestinal	2 (7.1)
	Plastics	3 (10.7)
	Urology	1 (3.6)
	Neurosurgery	3 (10.7)
	Vascular	2 (7.1)
Procedure Type, n (%)	Elective	14 (50)
	Unplanned	14 (50)
Surgery Type, n (%)	Minor	17 (60.7)
	Major	11 (39.3)

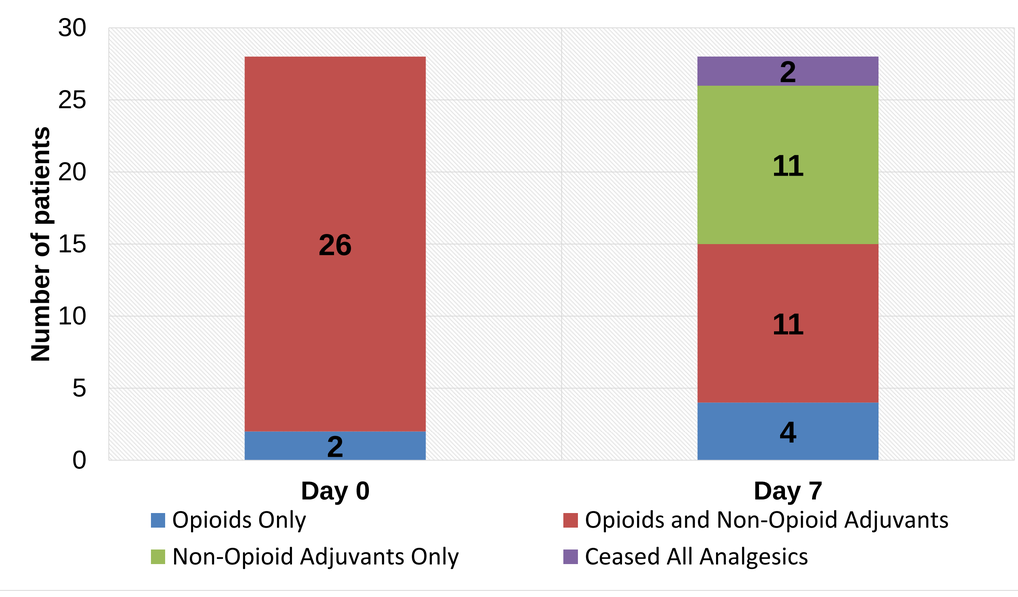
Day 0: At discharge ten patients (36%) were prescribed one opioid, 53% (n=15) two opioids and 11% (n=3) three opioids. Median daily MOE on discharge was 60mg (Table 2). Only 50% of patients were discharged with an opioid weaning plan.

Table 2: Median daily morphine oral equivalence (MOE) at Days 0 and 7

	Day 0	Day 7	P value
MOE, median (IQR), mg	60 (45-95)	15 (15-50)	**0.003**

RESULTS cont.

Figure 1: Analgesic Usage at Days 0 and 7 post-operative



Day 7: No patients reported increased analgesia requirements. A statistically significant reduction in median daily MOE was observed (15mg; p=0.003); 79% of patients were using non-opioid adjuvants with or without opioids. By day 7, half of the patients (n=14, 50%) had reduced use and 46% (n=13) ceased opioid therapy, one patient continued the same daily opioid use. Reasons for reduced or ceased use included: no pain (n=11), no remaining supply (n=9), side effects (n=4) and fear of addiction (n=3). 29% and 43% of patients reported worsening pain and FAS, respectively (Table 3). Nine patients sourced additional opioids beyond discharge supply: six obtained prescriptions from general practitioners, two started over-the-counter (OTC) codeine products, and one used an old supply.

Table 3: Pain and Functional Activity Scores (FAS)

Pain Score		Day 7 (n=28)
Pain at Rest, n (%)	Increased	8 (28.6)
	No Change	6 (21.4)
	Decreased	14 (50.0)
FAS*, n (%)	Increased	12 (42.8)
	No Change	12 (42.8)
	Decreased	4 (14.4)

* FAS: an increase in FAS implies worsening limitation of movement due to pain

Patient Satisfaction of Pain Management: Most patients were very satisfied (n=16) or satisfied (n=10; total 93%). Two patients were dissatisfied with pain management.

DISCUSSION

Overall, median daily MOE was reduced significantly at day 7 post-discharge, however the majority of patients were still using opioids and/or adjuvants. Despite some patients reporting worsening pain and FAS, no patients reported increased opioid use, though some patients sourced additional opioids beyond discharge supply. Of concern, only half of patients were discharged with a complete opioid weaning plan, highlighting issues around discharge prescribing and patient education. Despite this, the majority of patients were satisfied with their pain management. Previous studies suggest factors such as staff friendliness and overall hospital experience may influence satisfaction levels, independent of pain scores.[7]

The study achieved a smaller than desired sample size, potentially due to the short study period, low response rate, identification of eligible patients or effective opioid de-escalation by clinical pharmacists. However, as a pilot, it highlights important issues to consider both in discharge analgesia planning and study design.

CONCLUSION

This observational study demonstrated that over half of surgical patients continued to take opioids at day 7 post-discharge. While the majority of patients were satisfied with their pain management, some reported worsened pain and functional scores. Further interventions are needed including patient-centred weaning plans and education to optimise opioid analgesia deescalation, management of patient pain expectations, and adequate control of residual pain following surgical discharge.

REFERENCES

1. Bartels K, et al. PLOS One 2016 11(1): 1-10
2. Hooten MW, et al. Mayo Clin Proc 2015 90(7): 850-856
3. Bateman BT, Choudhry NK. JAMA 2016 176(5): 583-584
4. Wu CL. Lancet. 2011 377: 2215-2225
5. Alam A, et al. Arch Intern Med 2012 172(5): 425-430.
6. Therapeutic Guidelines. 2012
7. Apfelbaum JL, et al. International Anesthesia Research Society 2003 97: 534-540.

theAlfred Caulfield HOSPITAL Sandringham HOSPITAL MSHC MELBOURNE SEXUAL HEALTH CENTRE