

A Portrait of Morphine Use at Home After Pediatric Surgery

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Background

Following case reports of deaths in children associated with codeine use came a shift in practice from codeine to other opioids for post-surgical pain management. This shift brings about concerns regarding morphine use and safety at home, which have not yet been addressed in this population.

Objectives of this study

Primary outcome: to determine the compliance with the discharge prescription.

Other outcomes: the number of doses of morphine and other analgesics administered during the follow-up period, parents' perceptions about morphine, safety of morphine use at home.

Methods

Study design: a prospective observational study conducted at Sainte-Justine University Health Center, a mother-child teaching hospital.

Inclusion criteria: patients less than 12 years of age undergoing surgery between January and May 2014 and receiving a morphine prescription upon discharge.

Exclusion criteria: patients for whom the follow-up was impracticable or who were taking long-acting opioids.

Data collection: a telephone interview conducted on day 3 or later (day 0 being the day of discharge).

Results

Population

271 legal guardians were approached and 243 subjects were included. Of these, 24 (10%) were lost to follow-up. Of the 219 subjects followed, 47.5% (n = 104) received a regular basis prescription for morphine and 52.5% (n = 115) received an as needed prescription for morphine.

Characteristics of Study Participants (n = 243)	
Age (y)	
Median (IQR)	4.0 (2.6 – 7.3)
Male, n (%)	160 (65.8)
Surgical procedure, n (%)	
Ear-nose-throat	134 (55.1)
Urological-gynecological	35 (14.4)
Orthopedic	29 (11.9)
Plastic	28 (11.5)
Other	17 (7.0)
Length of hospital stay for admitted subjects (n = 98) (d)	
Median (IQR)	1 (1 – 2)

Profile of morphine use at home

Of the 219 subjects who completed the study, 84.9% (95% CI, 80.2%-89.6%) obtained the morphine prescribed at discharge.

Table 1. Filling and Compliance With Morphine Prescription

	Morphine prescribed on a regular basis	Morphine prescribed as needed
% of participants having filled prescription after discharge	95% 95%CI: 91-99	76% 95%CI: 68-84
% of participants compliant with morphine prescription ¹	56% 95%CI: 46-66	85% 95%CI: 78-92

¹Definition of compliance: For a regular basis prescription, the prescribed amount of the medication at the interval written on the discharge prescription was administered to the subject. For an as needed prescription, the prescribed amount of medication was administered to the subject when pain was present.

Most frequent reasons for non-compliance in the group with a regular basis morphine prescription:

- absence of pain
- pain relieved by morphine given as needed

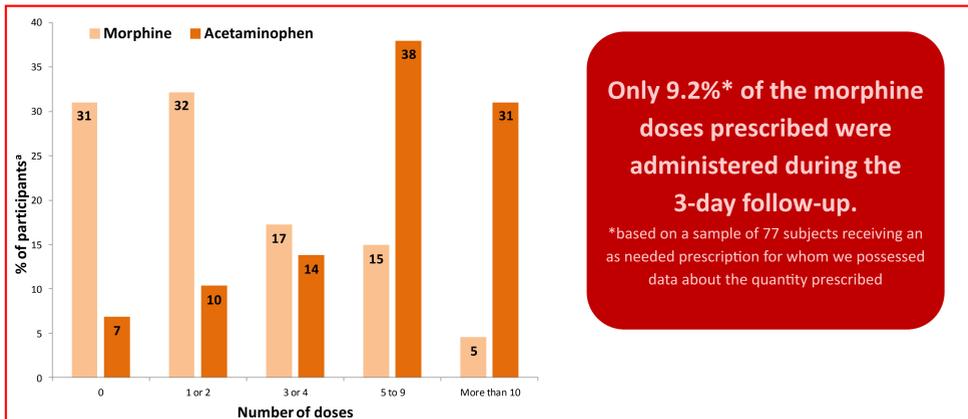


Figure 1. Number of analgesic doses administered to subjects with an "as needed" morphine prescription during the 3-day follow-up

*Only subjects who filled the morphine prescription after discharge are included (n = 87).

Perceptions about morphine

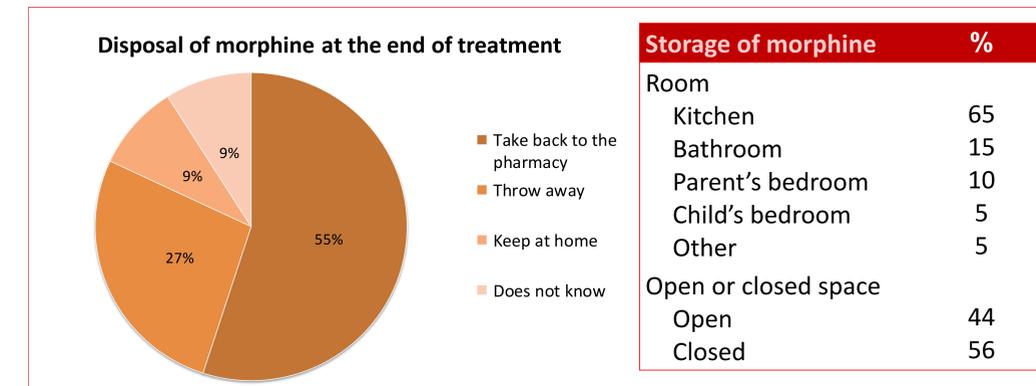
A majority of participants:

- agreed that morphine was an adequate pain medication to be given to children after surgery
- was willing to re-administer this medication to their children in the future if it were prescribed.

20% of participants expressed their concerns of addiction to morphine even when used for a limited amount of time.

Safety of morphine use at home

Of the 172 subjects who obtained morphine in liquid form, 96% received an oral syringe as a measuring device from the retail pharmacy. The remaining received a dropper or no measuring device at all.



Conflicting advice to parents might impact the use of morphine at home. In our study, 12% of legal guardians reported receiving conflicting advice from different health care professionals.

Limitations

- Potential memory bias
- Social desirability bias
- Potential lack of consistency for the data collection

Strengths

- Depiction of a real portrait of morphine administration at home
- Adequate sample size
- Minimal losses to follow-up

Conclusion

The shift of discharge prescriptions from codeine to morphine is not without cause for concern. With the large amounts of morphine prescribed and dispensed into homes comes an increasing potential for medication errors, abuse and intoxications.

Suggestions to improve the situation:

- reevaluating the child's pain at discharge
- minimizing the quantity of morphine prescribed and dispensed
- standardizing the information provided by healthcare professionals
- implicating community pharmacists and inciting them to explain measuring device use, safe storage and disposal