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.

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

<table>
<thead>
<tr>
<th>% of participants having filled prescription after discharge</th>
<th>Morphine prescribed on a regular basis</th>
<th>Morphine prescribed as needed</th>
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<tbody>
<tr>
<td>95%</td>
<td>95% CI: 91-99</td>
<td>95% CI: 68-84</td>
</tr>
<tr>
<td>56%</td>
<td>95% CI: 46-66</td>
<td>85%</td>
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</tbody>
</table>

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

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 concern about giving 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.

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

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

Funding Source:
- none

Conflit of Interest:
- none

Depiction of a real portrait of morphine administration at home.

Adequate sample size

Minimal losses to follow-up

In our study, 12% of legal guardians reported receiving conflicting advice from different health care professionals.

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

Only 9.2%* of the morphine doses prescribed were administered during the 3-day follow-up. *Only subjects who filled the morphine prescription after discharge are included (n = 87).

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