

Intranasal Fentanyl for Acute Pain

PICOT Question:

How effective is Intranasal Fentanyl vs. IV Morphine in the pediatric patient with acute pain?

Working in the Urgent Care setting, we see numerous patients with fractures, laceration and other injuries. Should we be using intranasal Fentanyl for faster/effective pain control for these patients? Could this be used as an initial pain control method before IV Morphine is given? Could it replace IV Morphine?

Search strategy implemented:

Some of my articles came from a search on Google scholar on the scope using the keywords: Effectiveness of nasal Fentanyl for pain control in Pediatric patients with acute pain. I also asked for help from the CMH Librarian.

Search outcome:

Two articles from Google scholar using the key phrase: Effectiveness Fentanyl for pain control in pediatric patient with fracture or acute pain in the ED. Two articles sent to me by the CMH Librarian. Out of the four articles obtained, the three listed below answered the question.

Synthesis of relevant studies:

Author, date, country, and industry of funding	Patient Group	Level of Evidence (Oxford) / Strength of Evidence (GRADE)	Research design	Significant results	Limitations
Cole, J, Shepherd, Michael, Young, Phillip Children's ED, Starship Children's Hospital, and Kidzfirst ED, Middlemore Hospital,	Children ages 6mo to 36 mos presenting to ED with an acute injury less than 6 hours old that required	Level of Evidence III	Cross Sectional (Analytic)	46 children with a mean age of approximately 2 years, with acute pain due to injuries. Within 10 mins. 93% of the children had a reduction in their pain score, and within 30 mins 98% had a reduction in pain score.	This study did not compare IV, IM opiate analgesia against the IN analgesia. The data collection was performed by multiple nurses using the FLACC scale.

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Auckland, New Zealand	acute analgesia greater than that provided by oral non-opiate analgesia				
Borland, Meredith, Jacobs, Ian, Geelhoed, Gary, Princess Margaret Hospital, Department of Emergency Medicine, University of Western Australia, Perth, Western Australia, Australia	Children in acute pain between ages 3 and 12 years old that presented to emergency depart in need of immediate analgesia.	Level of Evidence III	Cross Sectional (Analytic)	45 children were enrolled with a mean age of 8 years. Patient and caregivers undertook pain scores every 5 min for 30 min after IN Fentanyl was given. 16 children required no further Fentanyl after 1 st dose. 14 required a 1 further dose. 8 required 2 extra doses and 7 required 3 extra doses. 1 required IV pain medication. This study felt they were able to show significant improvement in pains scores within 10 minutes post administration.	They did not randomize the patients enrolled or compare to our “gold Standard” of IV morphine. Only one person was enrolling patients, the enrollment of patients was not consecutive. Study took place in an acute setting where patients have not been educated on the use of pain scale tool.
Borland, Meredith, Jacobs, Ian, King, Barbara O'Brien, Debra Princess Margaret Hospital for children, Subiaco (Borland King) School of Paediatrics and Child	Children aged 7 to 15 years of age, with clinically deformed closed long'bone fracture presenting to an ED	Level of Evidence II	Randomized Controlled Trial	67 children were enrolled with a mean age of 10.9 years of age. 34 received IV morphine and 33 received intranasal fentanyl. Reduction in combined pain scores occurred in 5 mins, 10 mins, and 20 mins. Intranasal fentanyl was shown to be an effective analgesic in children when compared to IV morphine.	Enrollment was dependent on suitable patients being identified at triage. Using a visual analog scale as their pain measurement tool, because it has been less validated. No record was kept of the patients not enrolled, so no results were available on those patients.

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Commentary:

The information in the articles/studies show that Intranasal pain medication is a fast and efficient way to administer pain relief to children in a acute setting. We could possibly look at our practice in the urgent care setting and use this as a first line of pain medication for our patients.

Authored by:

Kelly Johnson, RN, CPN Critical Care Charge Nurse II

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References:

- Cole, Joanne, Michael Shepherd, and Phillip Young. "Intranasal Fentanyl in 1-3 Year-Olds: A Prospective Study of the Effectiveness of Intranasal Fentanyl as Acute Analgesia." *Emergency Medicine Australasia* 21 (2009): 395-400. Web.
- Borland, Meredith L., Ian Jacobs, and Gary Geelhoed. "Intranasal Fentanyl Reduces Acute Pain in Children in the Emergency Department: A Safety and Efficiency Study." *Emergency Medicine* 14 (2002): 275-80. Web.
- Borland, Meredith, Ian Jacobs, Barbara King, and Debra O'Brien. "A Randomized Controlled Trial Comparing Intranasal Fentanyl to Intravenous Morphine for Managing Acute Pain in Children in the Emergency Department." *Annals of Emergency Medicine* 49.3 (2007): 335-40. Web.

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