

Paramedic Critically Appraised Topic (CAT)

**Title:** Comparing the administration of **Intranasal Fentanyl** to the traditional standard of care, Intravenous Morphine.

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**Second Appraiser:**

**Clinical Scenario:** An 8 y/o female is presented to EMS post standing height fall with 10/10 pain and obvious deformity/lateral angulation to her left forearm. Patient is visibly distressed but her vital signs are stable and no other illness' or injuries are noted. Attending paramedics splint the injury, apply cold packs and prepare to initiate a 24G IV for administration of Morphine but find the patient inconsolable and IV access proves impossible at this time. What does one do next?

**PICO:** In patients presenting to EMS with musculoskeletal pain, does non-invasive IN Fentanyl offer a decrease in patient stress level while still maintaining comparable pain relief to that of invasive IV Morphine?

**Search Strategy:** In PubMed (Paramedic OR Ambulance OR Hospital) AND (IN-Fentanyl OR Fentanyl) AND (IV-Morphine OR Morphine) AND (Musculoskeletal OR Pain OR Injury OR Trauma)

**Relevant Papers:**

Author	P	Design	Outcomes	Results	Weakness
Borland et al.	- 67 Children (mean age 10.9 years) - with long bone fractures	Prospective, randomized, double blind, placebo controlled clinical trial	Pain Relief (Visual Analog scale)	IN Fentynal showed to be just as effective as IV Morphine but less invasive	N/A
Kennedy & Luhmann	Lit review of procedures involving pediatric patients with musco-skeletal injuries	Retro-spective analysis of procedures performed	Reduction of psycho-logical trauma, reduction in stress for healthcare provider, improved parental acceptance of rendered care, more accurate	- Pain relief, - decreased anxiety, Improved treatment, etc.	Argument is very one sided

			evaluation of injury		
Wong et al.	21 patients post-op C-section with the capability to operate a Patient Controlled Analgesia device (PCA )	Double blind study	Pain Relief as reported via a VAS	No clinically relevant intergroup difference	Small sample size, no males in research group

**Comments:**

The three reviewed articles indicate that intranasal Fentanyl has a comparable effect on the management of ones pain to that of intravenous Morphine. Both are safe, effective, and accessible. However, all three articles demonstrated the ease at which IN Fentanyl could be administered. This has enormous implications because the use of IN Fentanyl demonstrated improved patient-treatment outcomes, by easing pain related anxiety, avoiding invasive IV initiation, improving stress levels of the practitioner, etc. These articles further demonstrated that in a situation where an IV for pain management could not be started, IN Fentanyl offered an equal and effective alternative for all age groups.

Paramedic practice in nova scotia should re-align itself to incorporate IN fentanyl as a viable treatment option. It's versatility and effectiveness make it a prime treatment for not just ALS providers but for BLS providers as well.

**Clinical Bottom Line:**

IN Fentanyl is a safe, effective and versatile drug treatment. It is a clear improvement to the current practice of IV Morphine and if nothing else would work well in tandem with current pre hospital analgesia protocols.

**References:**

Borland, M. et al. (2007). A randomized controlled trial comparing intranasal fentanyl to intravenous morphine for managing acute pain in children in the emergency department. *Annals of Emergency Medicine*. Vol. 49, pp. 335-340.

Kennedy, R. & Luhmann, J. (1999). The “ouchless emergency department.” getting closer: advances in decreasing distress during painful procedures in the emergency department. *Pediatric Clinics of North America*. Vol. 46, pp. 1215-1247.

Wong, P. & Chadwick, F. D. & Karovits, J. (2003). Intranasal fentanyl for postoperative analgesia after elective caesarean section. *Anaesthesia*. Vol. 58, pp. 804-827.