

Paramedic CAT (Critically Appraised Topic) Worksheet

Title: Does Fentanyl provide a safe and acceptable alternative to Morphine for prehospital analgesia?

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Clinical Scenario: A 37 year old male falls while skiing and fractures his Tib/Fib. The ski patrol assesses the patient and prepares him for transport by EMS. The patient is complaining of 10/10 pain to Right Tib/Fib and has gross deformity to same. All vital signs are stable. No other injury is noted and the pt denies neck or back pain. On arrival EMS initiated a 20g IV infusion in his left forearm and prepares for pain management.

PICO Question: *In patients presenting to EMS with orthopedic pain (P) does Fentanyl (I) compared to morphine (C) provide a safe alternative to Morphine (O)?*

Search Strategy: In PubMed: (Prehospital OR Out of Hospital OR Paramedic) AND (Fentanyl OR Sublimaze) (MeSH) AND (Morphine OR Opiods) (MeSH)

Search Outcomes: PubMed search resulted in 87294 articles, of which 87 papers were found to be relevant. Three target articles were chosen.

Relevant Papers:

Author,Date	P	Design	Outcomes	Results	Weaknesses
Galinski (2005)	60 patients requiring analgesia were registered (54 Randomized, 6 Not Randomized)	Prospective Randomized, Double Blind LOE: I	Pain Relief (visual analog scale) adverse/allergic reaction	100% of patients had pain relief. No difference b/w IV morphine & fentanyl in pain relief. No difference in adverse events.	small sample size

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Rickard (2007)	258 patients requiring analgesia were randomized	Prospective Randomized Controlled LOE: I	Pain Relief adverse/allergic reaction	No significant difference in the reduction of pain with INF & IVM	Two different routes of administration
Borland (2007)	67 children requiring analgesia with ortho injuries, mean age 10.9 years	Prospective Randomized Controlled LOE: I (with IV placebo and IN placebo)	Pain Relief adverse/allergic reaction	No difference in pain scores between INF and IVM at 5, 10,, 20 or 30 minutes	-Use of INF vs. IVM -pediatric patients in the Emergency Department rather than prehospital setting -small sample size

Comments: From the 3 trials included it seems that fentanyl is a safe and effective alternative to morphine in the prehospital patient requiring analgesia. There were little or no differences in pain reduction between fentanyl and morphine. The Borland trial uses intranasal fentanyl (INF) instead of intravenous administration and the use of pediatric patients in the emergency department. The Rickard trial also uses INF vs IV morphine (IVM). These two studies demonstrate alternative routes for administration of Fentanyl are likely acceptable, should IV cannulation not be possible.

Why practice should *not* be changed: There was no difference in pain scales with morphine or fentanyl with any of these studies.

Clinical Bottom Line: Fentanyl is a safe and effective alternative to morphine in the prehospital setting. Whether administered IV or IN, fentanyl has analgesic properties that are similar to morphine.

References:

- Galinski M, et al (2005). A randomized, double blind study comparing morphine with fentanyl in prehospital analgesia. Am J Emerg Med; 23, 114-119.
- Rickard C, O'Meara P, McGrail M, Garner D, McLean A, Le Lievre P (2007). A randomized controlled trial of intranasal fentanyl vs morphine for analgesia in the prehospital setting. Am J Emerg Med; 25, 911-917.
- Borland M, Jacobs I, King B, O'Brien (2007) A randomized Controlled Trial Comparing Intranasal Fentanyl to Intravenous Morphine for Managing Acute Pain in Children in the Emergency Department. Ann Emerg Med; 49 (3), 335-340