

Paramedic – Evidence Based Medicine (P-EBP) Program

Paramedic CAT (Critically Appraised Topic) Worksheet

Title: Prehospital analgesia in the presence of suspected ACS

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Clinical Scenario:

While providing care for a patient with suspected ACS paramedics administer oxygen, aspirin, and nitroglycerine to achieve the desired goal of pain relief. Despite these initial standard interventions chest pain persists; in the absence of contraindications paramedics decide to administer an opioid pain reliever. Is fentanyl an appropriate alternative instead of the more traditionally chosen morphine?

PICO (Population – Intervention – Comparison – Outcome) Question:

In the presence of ACS, does fentanyl vs morphine provide adequate analgesia?

Search Strategy: (FENANYL OR ALFENTANIL)) AND (OPIATE OR NARCOTIC OR MORPHINE)) AND (ACS OR "ACUTE CORONARY SYNDROME" OR "CHEST PAIN" OR ISCHEMIC OR ANGINA OR STEMI OR NSTEMI OR "HEART ATTACK")) AND (PREHOSPITAL OR "OUT-OF HOSPITAL" OR PARAMEDIC OR EMS OR EMT OR AMBULANCE)

Search Outcome: 2 results

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Relevant Papers:

AUTHOR, DATE	POPULATION: SAMPLE CHARACTERISTICS	DESIGN (LOE)	OUTCOMES	RESULTS	STRENGTHS/ WEAKNESSES
8, December, 2001 - Silfvast T	36 patients experiencing acute ischemic like chest pain in the prehospital setting who either received morphine (20) or fentanyl (16) for analgesia.	Randomized prospective study with a control group. LOE 1	Pain relief on VAS and time to pain relief.	Rapid pain relief was experienced by the patients in the fentanyl group within 2 minutes. This conforms to the well-documented fast onset of action of this drug and is clinically not usually seen with morphine.	<ul style="list-style-type: none"> • Could have used bigger sample size. • Study was physician implemented in the field possibly suggesting potential differences with paramedic implementation.
1 November 2010 Johan Herlitz	Pre-hospital treatment of chest pain and associated anxiety.	Literature search, using PubMed and the appropriate key words. Included randomised clinical trials and observational studies.	To identify aspects of chest pain in the prehospital setting, including	8 studies commented on morphine. Some listed side effects of morphine treatment in ACSA were: hypotension(4%),	- Only a literature review. Provides little valid evidence for our question.

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			treatment.	bradycardia(2%) nausea/ Vomiting (28% in one study. Another study stated incomplete pain relief from morphine.	
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Comments:

Patients whose electrocardiogram revealed an acute myocardial infarction received thrombolytic therapy on the scene. They were not included because of the workload imposed on the prehospital team.

Consider: *Why would you NOT change practice, based on this article?*

In reference to the initial question, the literary search revealed only one article which asked the exact question at hand. The article based on a study of 40 patients suggests that fentanyl is a superior choice as an opioid analgesic for ACS.

Clinical Bottom Line:

Fentanyl was found to be a safe and effective analgesic as the initial opioid in the treatment of haemodynamically stable patients with ischaemic-type chest pain in the prehospital setting.

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References:

SILFVAST T., SAARNIVAARA L., (2001). Comparison of alfentanil and morphine in the Prehospital treatment of patients with acute ischaemic-type chest pain. Eur J Em Med 8;275-278

Herlitz J., Bang A., Omerovic E., Wireklint-Sundström B., (2011) Is pre-hospital treatment of chest pain optimal in acute coronary syndrome? The relief of both pain and anxiety is needed. Int J Cardio 149: 147-151