

Review: Opiate administration may alter physical examination findings, but does not increase management errors in acute abdominal pain

Ranji SR, Goldman LE, Simel DL, Shojania KG. Do opiates affect the clinical evaluation of patients with acute abdominal pain? JAMA. 2006;296:1764-74.

Clinical impact ratings: Emergency Med ★★★★★☆☆ GIM/FP/GP ★★★★★☆☆ Gastroenterology ★★★★★☆☆

QUESTION

In patients with acute abdominal pain, does opiate administration for pain relief alter history and physical examination findings, and increase management errors?

METHODS

Data sources: MEDLINE (to May 2006), EMBASE/Excerpta Medica, and bibliographies of relevant studies.

Study selection and assessment: Randomized controlled trials (RCTs) or quasi-randomized controlled trials that compared opiate analgesia with placebo, and reported changes in history, physical examination findings, or clinical management in patients with acute abdominal pain. 12 RCTs, 9 in adults ($n = 1062$) and 3 in children ($n = 291$), met the selection criteria. Quality assessment of individual studies was based on allocation concealment and blinding. Most RCTs had methodologic problems.

Outcomes: Changes in history or physical examination findings, and management errors.

MAIN RESULTS

Meta-analyses using a random effects model showed that administration of opiates led to changes in physical examination results (Table). Subgroup analyses for adults and children showed trends that did not reach statistical significance (Table). Groups did not differ for management errors (Table). None of included RCTs reported changes in history.

CONCLUSION

In patients with acute abdominal pain, opiate administration may alter physical examination findings, but does not increase management errors.

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Opiate analgesia vs placebo in acute abdominal pain*

Outcomes	Number of trials (n)	Pooled risk ratio (95% CI)
Changes in physical examination for all patients	9 (861)	1.55 (1.02 to 2.36)†
Changes in physical examination for all patients with adequate analgesia	7 (525)	2.13 (1.14 to 3.98)†
Changes in physical examination for adults	7 (690)	1.51 (0.85 to 2.69)
Changes in physical examination for adults with adequate analgesia	5 (354)	2.22 (0.91 to 5.40)
Changes in physical examination for children (all RCTs with adequate analgesia)	2 (171)	2.11 (0.60 to 7.35)
		Pooled risk difference (CI)
Changes in management errors for all patients	7 (830)	0.1% (-3.6 to 3.8)
Changes in management errors for adults	4 (599)	0.3% (-4.1 to 4.7)
Changes in management errors for children	3 (231)	-0.8% (-8.6 to 6.9)

*CI defined in Glossary. A random-effects model was used.

†Statistically significant.

COMMENTARY

Patients with abdominal pain frequently present to the emergency department in severe distress and require extensive investigation and assessment by a general surgeon. Because analgesics might change the clinical examination and cause the surgeon to miss important findings (either delaying needed surgery or increasing the number of unnecessary surgeries), traditional teaching has recommended that narcotic analgesics be initially withheld from these patients.

The well-done systematic review by Ranji and colleagues provides challenges this recommendation. Although some methodological flaws are present in the included trials, the overall result favors giving narcotics. A small effect of narcotics on physical findings was detected, but there was not enough information to determine if these changes were helpful (permitting a more reliable examination) or harmful (causing important findings to be missed). More importantly, there was no suggestion of any increase in management errors in patients given narcotics.

The approach to abdominal pain in the emergency department has recently changed, with more patients having definitive diagnostic imaging (computed tomography or ultrasonography) before surgery. The review included 12 trials published from 1986 to 2005, and although it was not clearly stated, it was probable that fewer patients in the review had definitive imaging before surgery than is typical of current practice. We are unable to tell from this review how narcotics might change the use and interpretation of these imaging studies, but it seems even less likely that giving narcotics would increase errors with the current high use of diagnostic imaging. So, if it's needed, go ahead and treat the patient's pain before surgical assessment.

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