

2008 UIC Emergency Medicine Residency Research Course

Clinical Question: Abdominal Pain Rx Example

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Conducting Successful EM Resident Research: Asking & Answering a Clinically Relevant Question... Abdominal Pain Rx Example

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- ACEP Scientific Review Committee

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**Acute Abdominal
Pain Management:**
*The Time Has Already
Come and Gone*

Overview

Global Objectives

- **Improve patient outcomes**
 - Ensure accurate diagnosis, Rx
 - Enhance patient satisfaction
- **Improve our clinical practice**
 - Increase our options
 - Reduce stress
 - Improve the system & process

Overview

Session Objectives

- **Consider the clinical problem**
- **Examine the patient's perspective**
- **Review the clinician's reqs, etc**
- **Explore the medical literature**
- **Look at current practice**
- **Understand where this leaves us**

The Clinical Problem

Pain Rx & Acute Abd Pain

- **Abd pain a common ED complaint**
- **Pt priority: Pain relief**
- **MD priority: Accurate diagnosis**
- **Established texts: No pain Rx**
- **Clinical practice: Compliance??**
- **The medical literature: Good data??**

Abdominal Pain in the ED

Data From Clinical Studies

- **CDC Health Statistics data**
- **Emory/UIC ED Survey**

- **Some perspective based on actual clinical experience**

CDC Vital Stats Data

Data Source & Methods

- **NHAMCS probability sample survey**
- **Nat Center for Health Statistics, CDC**
- **392 EDs participated, 1997 sample**
- **Random sample of pt visits**
- **Random 4 week period**
- **22,209 ED records completed**

CDC Vital Stats Data

Chief Complaint Data

- **5.8% abdominal pain**
- **5.6% chest pain**
- **4.4% fever**
- **2.7% headache**
- **2.5% upper extremity injury**
- **2.4% shortness of breath**

CDC Vital Stats Data

Most Common Diagnoses

- 5.0% Open wound (not head)
- 4.7% Contusion
- 3.9% Acute URI, not pharyngitis
- 2.9% Chest pain
- 2.9% Abdominal pain
- 2.8% Otitis media, etc
- 2.7% Open wound of the head

Emory/UIC Pain Survey

Methods

- Pain survey at time of ED D/C
- Convenience sample, 9 am-12 mid
- Chart review
- Perceived and actual Rx compared
- IRB approval, informed consent

Emory/UIC Pain Survey

Discharge Diagnosis Data

- 17% Abdominal pain
- 16% Strains, sprains
- 10% Contusions
- 9% Angina
- 6% Fractures

Emory/UIC Pain Survey

Results: Pain Rx, Effects

- 83% of charts documented pain
- On average, 55 minutes spent in moderate to severe pain
- 62% received ED analgesic
- When pain med not given, 88% of the time b/c pt did not ask for it
- 1-9% of pts stated some adverse effect of the pain medication

Emory/UIC Pain Survey

Results: Pt Satisfaction

- 80% Satisfied or very satisfied
- 71% felt ED staff made it clear that pain treatment was a priority
- When ED staff clearly made pain Rx impt, pts more satisfied with pain Rx
– (mean 5.2 vs. 4.4, $p < .01$, 6 pt scale)
- Pain Rx satisfaction neg corr with D/C pain ($R = - 0.21$)

Pain Perspectives

The Patient with Abd Pain

- Pain is all consuming
- Pain brings all productivity to a halt
- Abd pain can be devastating
- Significant concern & pain
- No thoughts about being an addict

Pain Perspectives

The Patient

- The patient needs the doctor
- Pt wants pain relief first & foremost
- Pain is relative
- Avoid arbitrary assessments
- Avoid inaccurate judgments
- Consider pain relief

Pain Perspectives

The Clinician

- Doctors treat disease
- Having pain = being ill at ease
- Having pain = “dis – ease”

- Obligation to Dx, Rx abd pain
- Opportunity to provide service

Pain Perspectives

The Clinician

- Patient with pain has 2 problems
 - First is the abd pain itself
 - Second is the pt’s concern Re: pain
- Both problems must be addressed
- Second may be more important to pt
- Be explicit about both

Pain Perspectives

The Clinician

- Treat the pain early, aggressively
- Tell the pt you plan to do so
- Provide a reasonable Rx plan
- Re-evaluate after your therapies
- Again address the ongoing concerns

Abd Pain Rx in the ED

A Practitioner’s Approach

- Evaluate the type and level of pain
- Consider pain relief early
- Tell the pt of Rx plan for the pain
- Tailor Rx based on many factors

Abd Pain Rx in the ED

Factors to Consider

- Pain severity
- Likely diagnosis
- Time to definitive diagnosis
- Influence on diagnostics
- Influence on outcome
- Likely disposition

Abd Pain Rx Factors

Personal Factors

- Prior exp with abdominal pain pts
- Education, training
- Personal exp with abdominal pain
- X factors
 - Time of day, ED volume, setting
 - Relationship with pt

The Medical Literature

General Considerations

- One source of information
- Enhances oral tradition in medicine
- Many preferences
 - Applicable pt population, diseases
 - Randomized, blinded design
 - Useful pain therapies
 - Some level of confirmation

Abd Pain Rx in the ED

Specific Medical Lit Data

- One important text & many others
- Many commentaries
- Five clinical trials
 - UK and US studies
 - UK: pts with an “acute abdomen”
 - US: pts with “acute abdominal pain”
- Conclusion: No adverse effect of pain Rx

Abd Pain Medical Lit

Zoltie: Ann RCSE, 1986

- Setting: British Hosp, surgery admits
- Pts: 288 pts with acute abd pain
- Design: 3 studies, 2 rand with meds, 1 included no pain meds
- Rx: Oral buprenorphine 200 mcg x 1, 2
- Questions: Did pain, exam, Dx change?

Abd Pain Medical Lit

Zoltie: Ann RCSE, 1986

- Conclusions: No fear of masking Dx
- Pain improved with Rx, even placebo
- Abd exam became more precise: large area of tenderness localized
- Diagnosis became more clear with change in exam; no change in Dx

Abd Pain Medical Lit

Attard: BMJ, 1992

- Setting: UK hospital, ED patients
- Pts: 100 pts, acute abd pain
- Design: Randomized study, VAS scale
- Rx: Papaveratum 20 mg
- Questions: Did pain, exam, Dx change?
Was outcome appropriate?

Abd Pain Medical Lit

Attard: BMJ, 1992

- Conclusion: No problem with early pain Rx
- Pain improved with Rx: 65% vs. 4%, $p < .0001$
- Tenderness dec with Rx: 38% vs. 1%, $p < .0001$
- Same confidence in Dx, surg decisions
- One Rx group pt mis-Dx'd: appy (non-specific abd pain). Five mis-Dx'd with NS.

Abd Pain Medical Lit

Pace: Acad Emer Med, 1996

- Setting: US army hosp, ED patients
- Pts: 71 pts with acute abd pain < 48 hrs
- Design: Randomized study, VAS scale
- Rx: Morphine up to 20 mg
- Questions: Did pain, exam, Dx change?
Did diagnostic errors occur?

Abd Pain Medical Lit

Pace: Acad Emer Med, 1996

- Conclusions: MD able to Dx accurately
- Pain improved with Rx, 50% vs. 10%, $p < .01$
- No change in peritoneal signs with Rx
- Diagnosis slightly more accurate with MS; Prelim vs. final Dx, 80 vs. 61%, $p < .08$
- 3 MS pts mis-Dx'd: bladder obs (divertic), cholecystitis (appy), normal appy at surg

Abd Pain Medical Lit

LoVecchio: J Emer Med, 1997

- Setting: US NY hospital, ED patients
- Pts: 48 pts, acute abd (pain & peritonitis)
- Design: Randomized study, VAS scale
- Rx: Morphine 5-10 mg
- Questions: Did pain, exam, Dx change?
Did adverse events occur?

Abd Pain Medical Lit

LoVecchio: J Emer Med, 1997

- Conclusion: Px exam does change with Rx
- Pain improved with Rx; 2,1 vs. 0.5, $p < .05$
- Change in tenderness, localization with MS; 47%, 54% vs. 7%
- 3 MS pts mis-Dx'd: R TOA (appy), epididymitis (epidi, r/o appy), small bowel enteritis (r/o appy)

Abd Pain Medical Lit

Vermeulen: Radiology, 1999

- Setting: US univ hospital, ED patients
- Pts: 340 pts, RLQ abd pain, r/o appy
- Design: Randomized study, VAS scale
- Rx: Morphine 10 mg
- Questions: Did pain, exam, Dx change?
Did performance of US vary?

Abd Pain Medical Lit

Vermeulen: Radiology, 1999

- Conclusion: US, decisions OK after pain Rx
- Pain improved with Rx; 1.9 vs. 1, $p < .001$
- US results did not vary; PPV, NPV compare
- Decision to operate appropriate, equal
- No missed appendicitis cases in study

Abd Pain Medical Lit

Conclusions From 5 Studies

- Pain: decreased with Rx
- Exam:
 - less tender with Rx
 - tenderness more localized
- Decision making: not adversely affected
- Missed Dx rate: not increased with Rx
- Overall: no prob with early ED pain Rx

Abd Pain Rx in the ED

Clinical Practice

- Most problems are not life-threats
- Those that are will manifest themselves
- Our initial exam is prioritized
- Abdominal tenderness remains key
- Meds won't change the CBC
- We utilize technology: Xrays, CT, US

Abd Pain Rx in the ED

Clinical Practice

- Abdominal pain that resolves is good
- Many abdominal pain etiologies need to have the pain cycle broken
- During ED observation, pain can recur
- The pt will determine disposition
- Bad things won't occur with pain Rx

Abd Pain Rx in the ED

Benign Etiologies

- Usually Rx'd non-operatively (acutely)
 - Gastritis, gastroenteritis, GERD, PUDx
 - Diverticulitis, cholelithiasis, pancreatitis
 - Irritable bowel, constipation
 - UTI, renal colic, PIDx
- Commonly seen in the ED
- Pain Rx not likely a pt threat

Abd Pain Rx in the ED

Serious Etiologies

- Usually req acute operative intervention
 - Appendicitis, cholecystitis
 - Perforated hollow, disrupted solid viscus
 - AAA, ruptured AAA
- Seen less often than benign etiologies
- Initial exam or studies are key
- Pain Rx not likely a pt threat

Abd Pain Rx in the ED

Reasons Not to Rx Pain

- The ability to diagnose will decrease
- The diagnosis will be obscured
- The pt will have a worse outcome
- Pt satisfaction will worsen
- The MD's clinical practice will worsen
- *None are supported by the literature !!*

Abd Pain Rx in the ED

Reasons to Rx Abd Pain

- Pts will feel better sooner
- Pt satisfaction will be enhanced
- Pts will be better able to consent
- Pts may be less likely to req admission
- Pts may be more easily Dx'd (better exam)
- MD practice should be enhanced

The Clinical Problem

Cope's Early Dx Acute Abd

- Commonly stated as source text
- "Pain Rx will obscure Dx, inc M & M"
- 20th edition qualifies this info
- It calls into question giving no Rx
- It calls for early diagnosis
- It calls for a "tentative working Dx"

The Clinical Problem

Cope's Early Dx Acute Abd

"The realization, likely erroneous, that narcotics can obscure the clinical picture has given rise to the unfortunate dictum that these drugs should never be given until a diagnosis has been firmly established." page 5, 20th ed.

The Proposed Solution

Cope's Early Dx Acute Abd

- "The ideal solution is for a responsible surgeon to evaluate the patient at the earliest possible time." page 5, 20th ed.
- Now consider the use of the term Emergency Physician...

The "Real" Solution

Cope's Early Dx Acute Abd

"An adequate Hx, pertinent Px, and a tentative working Dx can be accomplished by an experienced 'Emergency Physician' in a relatively short period of time, after which relief should be given without hesitation." page 5-6, 20th ed.

Conclusions

Abd Pain Rx in the ED

- It is a common ED problem
- Abdominal pain can be severe
- Most etiologies are non-operative
- Pain Rx can occur at a reasonable time
- Pain Rx will not likely increase M & M
- Pain Rx will enhance pt satisfaction

Recommendations

Management Implications

- Document a good H & P early in ED
- Develop a reasonable differential
- Rx abd pain with a rational approach
- Know your story & punch line cold
- Be aggressive with need for OR
- Consider observation when in doubt

Recommendations

Research Implications

- Examine U.S. abd pain, Rx, & outcome
- Explore current datasets for same
- Determine relationship to satisfaction
- Develop protocols for ED pain use
- Promote findings broadly to EM, surgery
- Monitor pain Rx & outcome over time

Thank you.

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