



Assessment and Management of Acute Pain in Adult Medical Inpatients: A Systematic Review

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PREFACE

VA's Health Services Research and Development Service (HSR&D) works to improve the cost, quality, and outcomes of health care for our nation's veterans. Collaborating with VA leaders, managers, and policy makers, HSR&D focuses on important health care topics that are likely to have significant impact on quality improvement efforts. One significant collaborative effort is HSR&D's Evidence-based Synthesis Program (ESP). Through this program, HSR&D provides timely and accurate evidence syntheses on targeted health care topics. These products will be disseminated broadly throughout VA and will: inform VA clinical policy, develop clinical practice guidelines, set directions for future research to address gaps in knowledge, identify the evidence to support VA performance measures, and rationalize drug formulary decisions.

HSR&D provided funding for the two Evidence Based Practice Centers (EPCs) supported by the Agency for Healthcare Research and Quality (AHRQ) that also had an active and publicly acknowledged VA affiliation—Southern California EPC and Portland, OR EPC—so they could develop evidence syntheses on requested topics for dissemination to VA policymakers. A planning committee with representation from HSR&D, Patient Care Services, Office of Quality and Performance, and the VISN Clinical Management Officers, has been established to identify priority topics and to ensure the quality of final reports. Comments on this evidence report are welcome and can be sent to Susan Schiffner, ESP Program Manager, at Susan.Schiffner@va.gov.

EXECUTIVE SUMMARY

BACKGROUND

Poor pain management in surgical settings is known to be associated with slower recovery, greater morbidity, longer lengths of stay, lower patient satisfaction, and higher costs of care, suggesting that optimal pain care in these settings is of utmost importance in promoting acute illness management, recovery, and adaptation. VA/DoD Clinical Practice Guidelines have been developed for the management of acute post-operative pain, although the basis for many of the recommendations was by expert consensus rather than empirical evidence.

The prevalence of pain on the inpatient medical ward is lower than that of a surgical service, but is still substantial. In one hospital survey, 43% of medical ward patients experienced pain, and 12% reported unbearable pain. There are currently no pain-relevant performance measures in place that can support efforts to enhance pain care in these settings, and research on pain management in nonsurgical, nonmalignant acute pain is sparse.

The Key Questions were:

- 1. For inpatients who have acute pain, how do differences in timing and frequency of assessment, severity of pain, and follow-up of pain affect choice of treatment, clinical outcomes, and safety?*
- 2. How do the timing and route of administration of pain interventions compare in effectiveness, adverse effects, and safety in these inpatient care settings?*
- 3. For inpatients with impaired self-report due to any of several factors, including delirium or confusion, pre-existing severe dementia, closed head injury, stroke, and psychosis, how do differences in assessment and management of acute pain affect clinical outcomes or safety?*
- 4. For inpatients with dependencies on tobacco, alcohol, stimulant, marijuana, or opioids, how do differences in assessment and management of acute pain affect clinical outcomes or safety? How do the assessment and management of acute pain differ between patients on preexisting opioid therapy and patients with opiate addiction?*

METHODS

We searched in Medline (via PubMed), PubMed Clinical Queries, and the Cochrane Database of Systematic Reviews (searched via EBM) for systematic reviews published from 1996 to April, 2007. We also conducted a focused search in Medline for primary studies published from 1950 to July 2007 that address KQ1 or the use of PCA for non-surgical pain. Additional citations were identified from reference lists and searches of web sites devoted to pain management. Two investigators independently reviewed titles, abstracts, and articles, and performed a critical analysis of the literature and compiled narrative summaries to address the key questions.

RESULTS

We screened 3069 titles and abstracts, and performed a more detailed review on 211 articles. From these, we identified recent systematic reviews, randomized controlled trials (RCTs), and observational studies that addressed one of the key questions.

Key Question #1 Timing and Frequency, Severity, and Followup

Evidence in Target Population

No evidence that directly linked the timing, frequency, or choice of measure for assessment with the timeliness, choice, or safety of treatment specifically in medical inpatients. The psychometric properties of different pain intensity measures in hospitalized patients with nonsurgical, noncancer pain is not known. There are no good-quality studies comparing different assessment methods in the general medical inpatient setting.

There is good evidence that treating abdominal pain does not compromise timely diagnosis and treatment of the surgical abdomen.

Relevant Evidence from Other Settings

There is fair evidence from case series about the psychometric properties of different pain intensity measures in the outpatient, postsurgical, and palliative care settings. However, this evidence is not likely to be applicable to medical inpatients.

In the emergency department, patients who have mild to moderate pain that is not due to malignancy or coronary disease receive less timely, and less effective treatment than other patients. This finding is likely to be relevant to inpatients as well. Potential risk factors for delayed or inadequate analgesia include female sex, less severe pain, and daytime admissions. Crowding in the ER is also associated with undertreatment of pain.

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Key Question #2 Timing and Route of Administration of Pain Medications

Evidence in Target Population

There is fair evidence from one randomized trial that a multifaceted institutional intervention improved assessment and increased analgesic prescribing, but the intervention did not alter severity of pain. We found no evidence about the value of coordinating care with the patient's primary care physician.

Patient-controlled analgesia is used with increasing frequency in medical patients, but its safety and effectiveness have not been studied in this setting.

Relevant Evidence from Other Settings

In a good-quality systematic review of 32 studies, institutional interventions improved pain assessment and documentation and staff awareness of pain, and increased use of analgesics. While pain management teams and other system-wide interventions improved the timeliness and frequency of pain assessment, the findings were mixed for improvement in pain outcomes. In controlled studies, Acute Pain Services reduced pain intensity and improved functional ability, although the magnitude of these effects was not always clinically important.

After surgery, patients using PCA consume higher amounts of opioids and have better pain control and higher satisfaction than patients treated with prn or scheduled opioid treatments, with no higher incidence of most side effects. However, the effectiveness of safety of PCA in nonsurgical, nonmalignant acute pain is not known.

Key Question #3 Patients with Impaired Self-report

There is weak evidence that most cognitively impaired individuals can understand at least one self-assessment measure. For patients who cannot understand any of the self-assessment measures, some guidelines recommend use of an observational assessment measure, while others recommend empiric pain treatment if the impaired patient has diagnoses usually associated with pain. Almost no evidence is available to guide management of pain in delirium.

Key Question #4 Patients with drug dependencies

Several instruments intended to screen chronic opioid users for addiction may be helpful in assessing whether relevant signs, symptoms, and behaviors are present. Evidence about treating pain in patients with substance abuse disorders or chronic opioid use is weak, being derived from case reports, retrospective studies and expert opinion.