Pain in Patients with Polytrauma

APPENDIX A. SEARCH STRATEGY

Two librarians (AH and RC) independently designed search strategies based on the key questions. The results of both searches were combined into a single reference library.

Below is the search strategy designed by AH:

Database: Ovid MEDLINE(R) <1950 to January Week 5 2008>
Search Strategy:

1 polytraum$.mp. (2115)
2 exp Multiple Trauma/ (7404)
3 (multiple adj3 (wound$ or injur$ or traum$ or casualt$)).mp. (12171)
4 1 or 2 or 3 (13048)
5 exp Blast Injuries/ (1862)
6 exp Brain Injuries/ (34104)
7 ((head or cran$ or cereb$ or brain$ or explosi$ or explod$ or blast$) adj3 (traum$ or wound$ or injur$ or damag$)).mp. (88531)
8 5 or 6 or 7 (90818)
9 exp pain/ (218224)
10 exp pain measurement/ (33373)
11 exp nociceptors/ (8377)
12 (pain$ or agony or agoniz$ or nocicept$).mp. [mp=title, original title, abstract, name of substance word, subject heading word] (334241)
13 9 or 10 or 11 or 12 (392032)
14 9 or 10 (230078)
15 4 and 14 (175)
16 5 and 14 (12)
17 exp War/ (25443)
18 exp Military Personnel/ (15657)
19 exp Military Medicine/ (21662)
20 exp Veterans/ (5122)
21 exp Veterans Disability Claims/ (209)
22 Hospitals, Veterans/ (4480)
23 exp "United States Department of Veterans Affairs"/ (3021)
24 (desert storm or gulf war or enduring freedom or iraqi freedom).mp. (1606)
25 exp Iraq War, 2003-/ or exp Iraq/ (2569)
26 (iraq or soldier$ or veteran$ or combat$ or militar$ or battle$).mp. (77729)
27 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 (94873)
28 exp "wounds and injuries"/ or in.fs. (580168)
29 27 and 28 (9834)
30 8 and 13 (1988)
31 limit 30 to humans (1836)
32 limit 31 to english language (1402)
33 limit 31 to abstracts (1447)
34 32 or 33 (1681)
35 4 and 13 (500)
36 limit 35 to humans (491)
37 limit 36 to english language (359)
38 limit 36 to abstracts (465)
39 37 or 38 (483)
40 13 and 29 (449)
Pain in Patients with Polytrauma

Below is the search strategy designed by RC. This search was saved in PubMed to provide automatic weekly updates:

# Pain in Patients with Polytrauma

## APPENDIX B. ARTICLE SCREENING FORM

<table>
<thead>
<tr>
<th>Author, Year</th>
<th>Title</th>
<th>Key words or categories:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

1. Does the study population constitute or include:
   a. Polytrauma patients in or after rehab phase .................
   b. Patients with blast-related headaches ......................
   c. Neither a) nor b) ........................................STOP

2. Does the study intervention strictly address:
   a. Perioperative or surgical pain management ..............STOP
   b. Treatment for burn injuries only ...........................STOP

3. Do the study outcomes include measures of pain (pain intensity and/or pain-related function)?
   c. No ..........................................................STOP
   d. Yes ...........................................................STOP

4. Is the text of the article in English?
   a. No ...........................................................STOP
   b. Yes ............................................................

5. Does the article provide primary data?
   a. No (letter/commentary/non-systematic review) ............STOP
   b. Yes .............................................................

6. If this article meets no other criterion, should it be saved for background?
   a. No ...........................................................STOP
   b. Yes .............................................................

Circle the Key Question(s) to which this article applies:

6. Have reliable and valid measures and assessment tools been developed to measure pain intensity and pain-related functional interference among patients with cognitive deficits due to TBI? Which measures and tools are likely to be most useful in assessing pain in polytrauma patients with cognitive deficits due to TBI?

7. Which treatment approaches are most likely to be effective in improving pain outcomes (pain intensity and functional interference) in polytrauma patients? Which pain treatment approaches are most likely to enhance overall rehabilitation efforts?

8. Does blast-related headache pain differ in terms of phenomenology and treatment from other types of headache pain? Which treatments are best for persistent blast-related headache pain?

9. What factors are associated with better and worse clinical outcomes among polytrauma patients? Have interventions been developed to specifically address these factors?

10. What are unique provider and system barriers to detecting and treating pain among polytrauma patients? Have interventions been developed to effectively address these barriers?

For reference:

- **Definition of Polytrauma**: Concurrent injury to two or more body parts or systems that results in cognitive, physical, psychological or other psychosocial impairments. Combat-related mental conditions co-occurring with injury to at least one other system also constitutes polytrauma.
- **Scope of Review**: The scope includes the assessment and treatment in rehabilitation and post-rehabilitation care settings of persistent pain or exacerbations of pain resulting from polytraumatic injuries. The scope of this review excludes the following: battlefield/emergency assessment and care; treatment of burn injuries; choice of surgical strategy, and perioperative management of injuries suffered in trauma. The scope also excludes post-traumatic/post-concussive headache unrelated to blast injury, unless the sample includes patients with moderate or greater cognitive deficit.

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APPENDIX C. USPSTF QUALITY RATING CRITERIA

Randomized Controlled Trials (RCTs) and Cohort Studies

Criteria

- Initial assembly of comparable groups: RCTs—adequate randomization, including concealment and whether potential confounders were distributed equally among groups; cohort studies—consideration of potential confounders with either restriction or measurement for adjustment in the analysis; consideration of inception cohorts
- Maintenance of comparable groups (includes attrition, cross-overs, adherence, contamination)
- Important differential loss to follow-up or overall high loss to follow-up
- Measurements: equal, reliable, and valid (includes masking of outcome assessment)
- Clear definition of interventions
- Important outcomes considered
- Analysis: adjustment for potential confounders for cohort studies, or intention-to-treat analysis for RCTs (i.e. analysis in which all participants in a trial are analyzed according to the intervention to which they were allocated, regardless of whether or not they completed the intervention)

Definition of ratings based on above criteria

Good: Meets all criteria: Comparable groups are assembled initially and maintained throughout the study (follow-up at least 80 percent); reliable and valid measurement instruments are used and applied equally to the groups; interventions are spelled out clearly; important outcomes are considered; and appropriate attention to confounders in analysis.

Fair: Studies will be graded “fair” if any or all of the following problems occur, without the important limitations noted in the “poor” category below: Generally comparable groups are assembled initially but some question remains whether some (although not major) differences occurred in follow-up; measurement instruments are acceptable (although not the best) and generally applied equally; some but not all important outcomes are considered; and some but not all potential confounders are accounted for.

Poor: Studies will be graded “poor” if any of the following major limitations exists: Groups assembled initially are not close to being comparable or maintained throughout the study; unreliable or invalid measurement instruments are used or not applied at all equally among groups (including not masking outcome assessment); and key confounders are given little or no attention.