

Finding systematic reviews on pain: building the KSR Pain Evidence database

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Background

Despite advances in the conduct, reporting and indexing of systematic reviews (SRs), challenges remain for clinicians in understanding reported results, interpreting the essential “bottom line” and applying this to practice. The aim of KSR Pain Evidence is to be a user-friendly source of value-added critical appraisals of SR evidence in pain management. Our experience of producing this database may be of interest to advocates of evidence based practice, information specialists and medical librarians.

Objective

To identify SRs on pain management from an extensive range of resources, in order to build a comprehensive database of critically appraised SRs with clinical bottom lines to be used to support medical practice, clinical decision making and patient care.

Methods

Information Specialists devised a strategy to retrieve all references on pain and pain management in Embase, Medline, Medline In-Process Citations, Medline Daily Update, the Cochrane Database of Systematic Reviews (CDSR), PsycINFO, the Allied and Complementary Medicine Database (AMED), the Database of Abstracts of Reviews of Effects (DARE) and the Cumulative Index to Nursing and Allied Health Literature (CINAHL). A sensitive SR filter was designed to maximise recall of candidate references. Searches were limited by publication date from 2010 onwards. Results were retrieved and de-duplicated using EndNote X6. Experienced Information Specialists sifted results to remove non-SR records and reviewers critically appraised the SRs using an adaption of the ROBIS tool¹ (see <http://www.robis-tool.info/>). For each review, an overall risk of bias, summary and clinical bottom line statement were written (Figure I).


Figure I: Sample KSR Pain Evidence record

Tramadol for postoperative pain treatment in children
Cochrane Database Syst Rev. 2015;CD009574(3)
Schnabel, Alexander ; Reichl, Sylvia U. ; Meyer-Friessem, Christine ; Zahn, Peter K. ; Pogatzki-Zahn, Esther

Bottom Line

This review demonstrated that tramadol administration may provide appropriate analgesia when compared to placebo, which was based on results showing reduced rescue analgesia in children treated with tramadol compared to placebo. These findings were likely to be reliable. Further randomised controlled trials comparing tramadol with other commonly used opioids were needed in order to enable an appropriate risk benefit analysis.

Risk of Bias Assessment



Overall summary

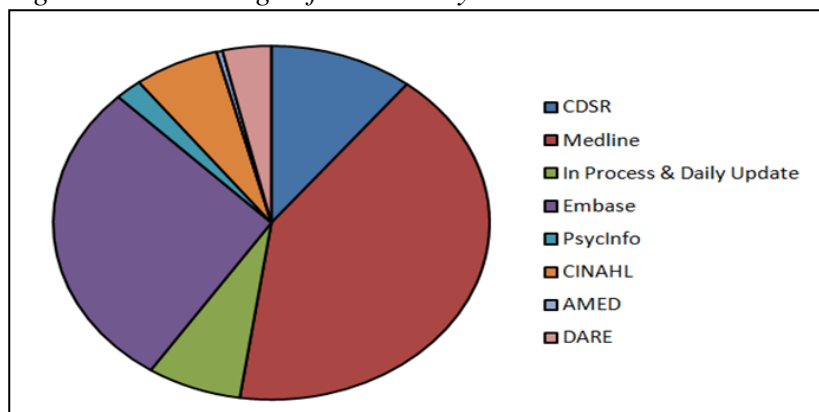
All domains were considered at low concern which suggested there were no limitations with the review process.

A. Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	Probably yes
B. Was the relevance of identified studies to the review's research question appropriately considered?	Yes
C. Did the reviewers avoid emphasizing results on the basis of their statistical significance?	Yes
Risk of bias in the review	Low Risk

Results

87% of results submitted for critical appraisal to the KSR Pain Evidence database came from Medline databases, Embase and CDSR. 30% of records came from databases other than Medline and Embase (Figure II).

Figure II: Percentage of included systematic reviews



Searches (to date) have found 30369 records (Table 1). Following de-duplication, 14983 records were sifted for inclusion and 3389 were submitted for critical appraisal. The screening inclusion rate for the topic of pain was 23%.

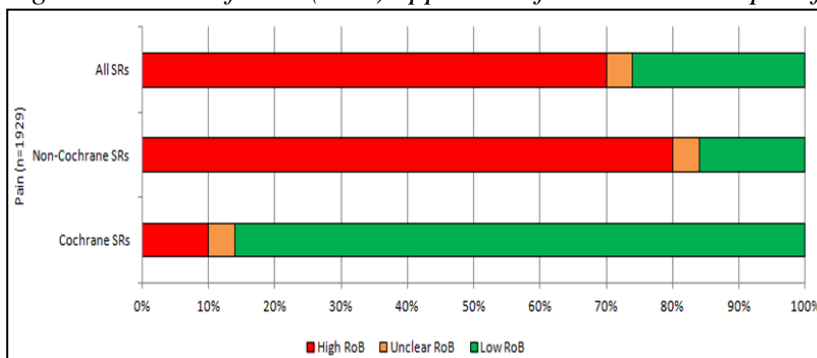
Table 1

Database	Total found	Total after de-duplication	Submitted for CA
CDSR	2084	1474	361
Medline	8184	5605	1412
In Process & Daily Update	826	750	237
Embase	11239	4434	960
PsycInfo	2128	1144	68
CINAHL	3322	1033	214
AMED	389	32	15
DARE	2197	511	122
TOTAL	30369	14983	3389

*Results are listed in order of download into Endnote. This means there will be proportionately fewer submitted results from DARE as this is the last set of results to be downloaded into Endnote.

Of the SRs critically appraised by reviewers so far, a significant 70% were considered to be of high risk of bias. 10% of Cochrane SRs were also found to be of high risk of bias (Figure III).

Figure III: Risk of Bias (RoB) appraisals for SRs on the topic of pain 2010-2015



Conclusion

Comprehensive searches of multiple sources, in combination with a sensitive search strategy, are essential to ensure robust retrieval of SRs on pain as relying only on Medline and Embase could miss 30% of SRs and meta-analyses on pain-related topics. The large number of SRs found to be of high risk of bias, or unclear, is of concern for clinical decision makers and validates the utility of a database such as KSR Pain Evidence.

REFERENCES 1. Whiting P, Savovic J, Higgins JP, Caldwell DM, Reeves BC, Shea B, et al. ROBIS: A new tool to assess risk of bias in systematic reviews was developed. J Clin Epidemiol 2015.