Systematic review reporting

Why is complete reporting of systematic reviews important?

Systematic reviews serve many critical roles for many types of users, including:

- patients, healthcare providers, researchers and policy makers

These roles include:

- Addressing questions that cannot be answered by individual studies
- Identifying problems that need addressing in future studies
- Generating or evaluating theories

Systematic reviews need to be:

- Transparent
- Complete
- Accurate about:
  - WHY it was done
  - WHAT was DONE
  - WHAT was FOUND

Common aspects missing in reporting of systematic reviews

- Use of a protocol
- Eligibility criteria for publication status
- Years coverage of the search
- A full Boolean search logic for at least 1 database
- Methods for data extraction
- Methods for risk of bias assessment
- A primary outcome identified
- An abstract conclusion that incorporates study limitations
- Funding source


Updated items highlighted

A few key items will be discussed on the following slides

Example article*

BMJ 2021;372:m4825
http://dx.doi.org/10.1136/bmj.m4825

* pre-PRISMA2020, but still nicely illustrates many aspects of good SR reporting

ABSTRACT
Item 2 See the PRISMA 2020 for Abstracts checklist
(Page et al., 2021)
1. Identify the report as a systematic review (in abstract)
3. Inclusion and exclusion criteria
6. Methods used to present and synthesise the results
9. Brief summary of the limitations of the evidence included in the review
11. Specify the primary source of funding for the review
12. Provide the register name and registration number

METHODS
METHODS

**Item 5**
Eligibility criteria

Eligibility criteria
We included randomised controlled trials that compared any antidepressant drug with placebo in patients with back pain (neck or low back pain with or without radicular symptoms) or hip or knee osteoarthritis, or both. Symptoms of any duration were included. Trials including drug combinations were eligible if the treatment contrast between groups was antidepressant versus placebo. The placebo comparator could be active (a substance that has no known effect on pain but might mimic the adverse effects of antidepressants) or inert (a substance that is not thought to have a therapeutic or adverse effect).

We included reports published in peer reviewed journals as well as unpublished data posted on trial registry platforms (ClinicalTrials.gov and WHO International Clinical Trials Registry Platform). Trials that reported data on either pain, disability, or adverse events were included. No restrictions were placed on language or publication date. We excluded studies that included participants with serious spinal conditions (eg, fractures, cancer) and rheumatic conditions (eg, rheumatoid arthritis), unless these studies also included participants with back pain or hip or knee osteoarthritis, or a combination of these, and their data were reported separately. We considered studies to be ineligible when participants received previous back or osteoarthritis surgery but excluded studies that evaluated immediate postoperative pain management (ie, surgery within past month). Abstracts from conferences were also excluded.

**Methods**

6. Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies

6. Specify the date when each source was last searched or consulted

7. Present the full search strategies for all databases, registers and websites, including any filters and limits used
8. Specify the methods used to decide whether a study met the inclusion criteria of the review, including:
   - how many reviewers screened each record and each report retrieved,
   - whether they worked independently, and if applicable,
   - details of automation tools used in the process.

9. How many reviewers collected data from each report, whether they worked independently.

10b List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources).

9. any processes for obtaining or confirming data from study investigators.

10b Describe any assumptions made about any missing or unclear information.
METHODS

Item 10
Data items

10a List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.

METHODS

Items 11 & 15
Risk of Bias and Certainty assessments

11. Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.

15. Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.
METHODS

Item 12 & 13
Effect measures and Synthesis methods

12. Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.

13d. Describe any methods used to synthesise results and provide a rationale for the choice(s).

If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.

13a. Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).

14. Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).

15. Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.
RESULTS

Item 16 Study selection

Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.

Results
Overall, 2771 records were retrieved. Of these, 1930 records were screened after removal of duplicates and 1795 were excluded based on titles and abstracts. Of 131 potentially relevant trials screened for eligibility, 33 trials enrolling 5318 participants were included (fig 1). Most trials (n=28, 84.9%) used a parallel group design, whereas five (15.2%) used a crossover design with washout periods ranging from one week to two weeks. 35-39 Fourteen trials were sponsored.
New PRISMA flow diagram (Page et al. 2021)

RESULTS

Item 17
Study characteristics

Cite each included study and present its characteristics
RESULTS

Item 18
Risk of bias in studies summary

For 26 of 33 trials, at least one domain was classified as high risk of bias (supplemental file 7). Twenty six trials were unclear in describing the methods used to conceal allocation and therefore were at unclear risk of selection bias. One trial was at high risk of performance bias owing to inadequate blinding of participants, and 13 were at unclear risk of performance bias. One trial was at high risk of detection bias owing to inadequate blinding of participants, and another 12 trials were at unclear risk of detection bias. Eighteen trials were at high risk of attrition bias. Five and 14 trials were at high and unclear risk of reporting bias, respectively.

RESULTS

Items 19, 20b, 22
Results of individual studies, Results of syntheses, Certainty of Evidence

19. For all outcomes, present, for each study:
(a) summary statistics for each group (where appropriate) and
(b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.

20b. Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.

23. Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.
16. Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.
Items 24-27

24. Describe and explain any amendments to information provided at registration or in the protocol.

25. Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.

26. Declare any competing interests of review authors.

27. Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.

Questions?

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