Journal of Clinical Epidemiology 68 (2015) 1488–1495

Journal of Clinical Epidemiology

Deficiencies in the publication and reporting of the results of systematic reviews presented at scientific medical conferences

Sally Hopewell[a,b,*], Isabelle Boutron[a], Douglas G. Altman[b], Philippe Ravaud[a]

[a]*Centre d'Epidémiologie Clinique, Université Paris Descartes, INSERM U1153, Hôpital Hôtel Dieu, Aile A2 1er étage 1, Place du parvis Notre Dame, 75181 Paris, France*

[b]*Centre for Statistics in Medicine, Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, University of Oxford, Botnar Research Centre, Windmill Road, Oxford, OX3 7LD, UK*

Accepted 18 March 2015; Published online 28 March 2015

Abstract

Objectives: To evaluate the publication and quality of reporting of abstracts of systematic reviews presented at scientific medical conferences.

Study Design and Setting: We included all abstracts of systematic reviews published in the proceedings of nine leading international conferences in 2010. For each conference abstract, we searched PubMed (January 1, 2010, to June 2013) to identify their corresponding full publication. We assessed the extent to which conference abstracts and their corresponding journal abstract reported items included in the Preferred Reporting Items for Systematic reviews and Meta-Analysis for Abstracts checklist and recorded any important discrepancies between sources.

Results: We identified 197 abstracts of systematic reviews, representing <1% of the total number of conference abstracts presented. Of these 53% were published in full, the median time to publication was 14 months (interquartile range, 6.6–20.1 months). Although most conference and journal abstracts reported details of included studies (conference $n = 83$ of 103; 81% vs. journal $n = 81$ of 103; 79%), size and direction of effect (76% vs. 75%), and conclusions (79% vs. 81%), many failed to report the date of search (27% vs. 25%), assessment of risk of bias (18% vs. 12%), and the result for the main efficacy outcome(s) including the number of studies (37% vs. 31%) and participants (30% vs. 20%), harms(s) (17% vs. 17%), strengths (17% vs. 13%) and limitations (36% vs. 30%) of the evidence, or funding source (1% vs. 0%). There were discrepancies between journal and corresponding conference abstracts including deletion of studies (13%), changes in reported efficacy (11%), and harm (10%) outcome(s) and changes in the nature or direction of conclusions (24%).

Conclusion: Despite the importance of systematic reviews in the delivery of evidence-based health care, very few are presented at scientific conferences and only half of those presented are published in full. Serious deficiencies in the reporting of abstracts of systematic reviews make it difficult for readers to reliably assess their findings.

Keywords: Systematic reviews; Randomized controlled trials; Evidence-based health care; PRISMA statement; Abstracts; Critical appraisal

1. Introduction

The aim of a systematic review was to identify, critically appraise, and summarize evidence relating to a particular problem in an unbiased and systematic manner [1]. Systematic reviews represent the highest level of evidence in the "hierarchy of evidence" pyramid [2] and have received increased attention from scientists, editors, policy makers, and consumers. It is widely accepted that systematic reviews have the potential to ensure best practice and improve consistency in health care delivery by enabling users to make decisions based on the totality of the available evidence. The number of published systematic reviews is growing rapidly, and it is estimated that there are now approximately 75 new trials and 11 new systematic reviews of trials published per day [3]. However, in some parts of the world, because of a pay wall or poor internet connectivity, readers may only have access to the abstract of a systematic review. This means that sometimes decisions may be made on the basis of the abstract rather than the full publication [4].

Conflict of interests: All authors have completed the Unified Competing Interest form at www.icmje.org/coi_disclosure.pdf (available on request from the corresponding author) and declare no support from any organization for the submitted work; no financial relationships with any organizations that might have an interest in the submitted work in the previous 3 years; S.H. and D.G.A. are members of the PRISMA for Abstracts Group; no other relationships or activities that could appear to have influenced the submitted work.

Funding: None.

* Corresponding author. Centre for Statistics in Medicine, Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, University of Oxford, Botnar Research Centre, Windmill Road, Oxford, OX3 7LD, UK. Tel.: +44 1865 223458.

E-mail address: sally.hopewell@csm.ox.ac.uk (S. Hopewell).

http://dx.doi.org/10.1016/j.jclinepi.2015.03.006

What is new?

Key findings

- Despite the importance of systematic reviews in the delivery of evidence-based health care and the large number of abstracts presented at scientific conferences, less than 1% of abstracts in our sample reported the findings of a systematic review, of which only 53% were published in full.
- Important aspects of the systematic review methods and results were consistently poorly reported in both the conference and the corresponding journal abstract, notably the search date, method of assessing risk of bias, result (including number of studies and participants) for the main efficacy outcome(s), information about harms, and limitations of the evidence.
- There were also important discrepancies between the conference and corresponding journal abstracts including deletion of studies, changes in reported efficacy, and harm outcome(s) and in the nature or direction of the conclusions.

What this adds to what was known?

- Our study provides a comprehensive assessment of the prevalence of systematic reviews reported in conference abstracts, their associated full publication, and the quality of reporting.

What is the implication and what should change now?

- Serious deficiencies in reporting of abstracts of systematic reviews make it difficult for readers to reliably assess their findings. This makes them unusable and represents a considerable waste in already limited financial resources.
- We recommend journal editors and conference organizers actively implement Preferred Reporting Items for Systematic reviews and Meta-Analysis guidance for reporting abstracts of systematic reviews.

In addition, a substantial body of research is first presented at scientific meetings and published as an abstract in the conference proceedings or on the conference Web site. Abstracts are important because they allow readers to quickly assess the relevance of the research to clinical practice and the research findings [5]. However, around half of research presented at scientific meetings is never published in full, and failure to publish is associated with the significance of the study findings [6]. Much of this evidence has centered around clinical trials, where only 58% of conference abstracts reporting the results of randomized trials are ever published in full [6]. Even when published, there is a delay of around 19 months. There are also concerns about reliability and quality of clinical trials published in conference proceedings [7−10] and about the robustness of the trial results compared with their subsequent full publication [5]. To our knowledge, no similar studies have been performed comparing conference abstracts of systematic reviews and their associated full publications.

The aims of our study were (1) to determine the proportion of systematic reviews published as conference abstracts that are subsequently published in full; (2) to compare the quality of reporting of conference abstracts of systematic reviews and their corresponding journal abstracts; (3) to evaluate the consistency of information between conference abstracts of systematic reviews and their corresponding journal abstracts.

2. Methods

2.1. Sample selection

We selected all conference abstracts of systematic reviews evaluating health care published in the proceedings of nine leading international conferences in 2010. These were the American College of Rheumatology, American Diabetes Association, American Heart Association, American Psychiatric Association, American Society of Anaesthesiologists, American Society of Clinical Oncology, American Society of Hematology, American Thoracic Society, and the Infectious Diseases Society of America (see Supplementary material at www.jclinepi.com). We chose the proceedings of these conferences as they were known to publish abstracts of systematic reviews, and all abstracts from the meetings are published online and are searchable in electronic format.

For each congress held in 2010, we systematically searched on the dedicated meeting Web site for abstracts reporting the results of systematic reviews using the search terms "systematic review" and/or "meta-analysis" in either the title or abstract. All abstracts were screened by two reviewers, to identify abstracts of systematic reviews. We broadly defined a systematic review as one where the authors' stated objective was to summarize evidence from multiple studies and the abstract described explicit methods, regardless of the detail provided [1]. Systematic reviews of animal studies were excluded. For each identified conference abstract reporting the results of a systematic review, we then searched the US National Library of Medicine's PubMed database (search date: January 1, 2010, to June 2013) to identify its full publication using the following strategy: (1) the abstract's whole title; (2) part of the abstract's title; (3) one or more key words and the name of the first author; (4) one or more keywords and the name of the last author; and (5) the name of the first and last author.