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SYSTEMATIC REVIEWS

The quality of safety reporting in trials is still suboptimal: Survey of major general medical journals

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Abstract

Objective: To evaluate whether the quality of reporting harms improved after the publication of the Extension of the Consolidated Standards of Reporting Trials (CONSORT) statement and predictors that influence the safety reporting in randomized controlled trials (RCTs)

Study Design and Setting: Systematic survey of published RCTs assessing drugs. In MEDLINE, we identified 228 RCTs published in *Annals of Internal Medicine*, *British Medical Journal*, *Journal of American Medical Association*, *The Lancet*, and *The New England Journal of Medicine* in 2003 and 2006.

Results: The reporting of harms have improved over time both in quality and extent of space. However, the mean score as an overall measure of adequacy in reporting harms was 0.58 in 2003 and increased to 0.67 in 2006, indicating a moderate safety reporting. Safety was more adequate in trials with statistically significant results for efficacy, private funding, primary harms outcome, and anti-infective, anti-neoplasmatic, or immunosuppressive agents.

Conclusion: The use of the Extension of the CONSORT statement may be associated with improving the quality of safety reporting in RCTs, but there are still deficiencies that need to be corrected to use quantitative objective evidence for harms in performing meta-analyses and making therapeutic decisions.

Keywords: Adverse events; CONSORT statement; Drugs; Harms; Quality; Randomized controlled trials

1. Introduction

The Consolidated Standards of Reporting Trials (CONSORT) statement is aimed at standardizing and thereby improving the quality of published reports of randomized controlled trials (RCTs) [1]. In the first version of the CONSORT statement that was published in 1996, there was no item referring to reporting of adverse events [2]. In its revised version, 5 years later, the reporting of safety was first added as an item together with some other important methodological features of RCTs [3]. However, there was still considerable evidence that reporting of harms-related data from RCTs also needed improvement [4−7]. Therefore, at the end of 2004, an Extension of the CONSORT statement was published that suggested 10 new recommendations with accompanying explanations for the appropriate reporting of harms-related issues [8].

Since the publication of the CONSORT statement, several review articles have investigated its impact on the quality of reports of RCTs [9−14]. However, these studies showed that the quality of reporting of trials was improved but there was no examination on the safety reporting. Recently, two surveys were published, the one of which investigated the quality of reporting of trial abstracts, where there is only a mention of the proportion of abstracts that describes harms or side effects [15]. The second one evaluated the reporting of adverse events after the dissemination of the Extension for harms of the CONSORT statement, but there was no comparison before the publication of this extended guideline [16]. In the present study, we assessed the impact of the Extension of the CONSORT statement with the 10 new recommendations on the reporting of harms in trial reports published before and after its release. We also sought to understand the settings and predictors that influence the quality in reporting harms and gain insight for improving important deficiencies in this area.

2. Methods

2.1. Study RCTs

Published RCTs in 2003 (pre-CONSORT harm-reporting recommendations) and 2006 (post-CONSORT

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What is new?

Key finding

The quality of safety reporting in randomized controlled trials (RCTs) published in five major main medical journals is still suboptimal after the publication of the Extension of the Consolidated Standards of Reporting Trials (CONSORT) statement with recommendations for better reporting of harms.

What this adds to what was known

Considerable evidence suggested that reporting of harms-related data from RCTs is often neglected. This is true even after the publication of the Extension of the CONSORT statement, although there seemed to be an improvement over time. Additionally, a mean score is introduced as an overall measure of adequacy in reporting harms, ranging from 0 to 1. A value of 1 indicates perfect safety reporting, and lower values show poorer quality of harms-related data.

What is the implication and what should change now?

Authors should give more attention to writing harms and follow the 10 new recommendations about reporting harms-related issues according to the Extension of the CONSORT statement. This would help to use quantitative objective evidence for harms in performing meta-analyses and making therapeutic decisions.

harm-reporting recommendations) were selected from the *Annals of Internal Medicine*, *British Medical Journal*, *Journal of American Medical Association*, *The Lancet*, and *The New England Journal of Medicine* (*NEJM*). These medical journals are prestigious and likely to publish clinical trials with major impact on medical practice, and they adopt the CONSORT statement with the only exception of *NEJM* that adopted it in 2004.

2.2. Search strategy and exclusion criteria

MEDLINE was used to retrieve the articles, and the screening strategy included the specific journal name published either in year 2003 or 2006 and identification of human clinical trials with the word ‘‘random*’’ reported either in the title or in the abstract. For example, the electronic search strategy for the journal *The Lancet* for year 2003 was ((‘‘Lancet’’[Journal]) AND (‘‘2003/01/01’’[Publication Date]: ‘‘2004/01/01’’[Publication Date])) AND (random*[Title/Abstract]). Similarly, the same search strategy was used to identify the RCTs in other journals and in different years. Furthermore, reports were included only in case they were evaluating drug therapies. More specifically, the following types of articles were further excluded: (1) Studies on surgical interventions and vaccines, because safety may be assessed differently for such interventions as also described by other investigators [5], (2) brief communications, studies that had part of the results published previously and studies on post hoc secondary analysis to avoid underestimation of the harms reporting either because of the limited size (brief communications) or because harms were described in previously published articles, (3) cluster trials, because they usually do not report any safety data, (4) trials on vitamin and nutrition supplements and studies on radiotherapy, behavioral, psychotherapy, counseling, acupuncture, and other no drug interventions, for example, diet or exercise, and (5) other randomized trials, such as screening and diagnostic tests and cost-effectiveness studies. In two journals, some articles published in year 2007 were included in the original list of articles after the search criteria because their electronic publication appeared earlier, in year 2006, but these articles were excluded.

2.3. Data collection

The pertinent articles were first identified by examining the title and abstract from two independent abstractors (A.B.H. and T.D.) to ensure interobserver reliability. The agreement was nearly perfect with a kappa coefficient of 0.95 (95% confidence interval [CI] = 0.93−0.98). Then two of us (A.B.H. and C.B.) independently extracted data from the main text on the characteristics of reports and examined whether reporting of harms was described according to the 10 new recommendations in the Extension of the CONSORT statement. A summary of the 10 new recommendations is presented in Table 1. Discrepancies were resolved by consensus involving a third party (M.A.). Each recommendation was assigned a yes (code = 1) or no (code = 0) response depending on whether the authors had reported it, and in the case that an item was considered not applicable, it was coded as missing. This was considered a qualitative component of adverse event reporting. The characteristics of the studies included the following information: journal, year of publication, first author, country or countries where the trial took place, population, funding, primary outcome, significant finding for the efficacy outcome, time of follow-up, disease, treatment, sample size, masking, dose comparison, mode of drug administration, and whether data and monitoring safety board was involved. Categories for all these characteristics were precoded in a database.

We also recorded whether there were any safety data reported and how much space in printed pages was devoted to safety in the results section as an absolute number and as a proportion compared with the whole results section. In comparison, the space devoted to the names and affiliations