Clinical decision-making based on findings presented in conference abstracts: is it safe for our patients?

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Research findings presented in scientific conferences have a considerable direct and indirect impact on decision-making of clinicians. Investigators in various fields of research have examined the possible differences in aims, results, and conclusions between conference abstracts and subsequent corresponding published papers. They documented that differences between data presented in conference abstracts and published papers are frequent and occasionally major. These findings strongly support the position that we should not hurry to incorporate in clinical decision-making data presented at international or national scientific conferences. Instead, we believe that we better serve our patients by waiting at least for the evaluation of potential scientific advances by rigorous peer review.

KEYWORDS
Research findings; Scientific meeting; Randomized controlled trials; Endarterectomy; Peer review

Introduction

Clinicians sometimes use results presented at scientific conferences as abstracts in the decision-making process regarding patient management. In addition, research findings presented in the form of conference abstracts are sometimes used by authors of practice guidelines, or cited in articles and even medical textbooks. These facts suggest that data presented in conference abstracts have a considerable direct and indirect impact on decision-making in clinical practice.

Differences between data in conference abstracts and subsequent published papers

Toma et al.¹ expressed concerns regarding the discrepancies between results of randomized controlled trials presented in abstracts at the American College of Cardiology (ACC) scientific meetings and subsequent full-length articles. They found that about 40% of the analysed pairs showed discrepancies between the efficacy estimates reported in the meeting abstracts and the subsequent full-length articles.

In a previous study in another field (specifically, in the field of Infectious Diseases and Microbiology), we also performed a detailed comparison of aims, results, and conclusions presented in abstracts at the 39th and 40th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) and the subsequent corresponding published papers.² We found differences between data presented in conference abstracts and subsequent full publications in peer-reviewed journals in 59% of the analysed pairs. In 45% of these pairs, differences were considered to be major. In order to identify possible factors associated with differences in data between the conference abstracts and the subsequent published papers, we analysed several variables using logistic regression models. Time to publication (from presentation at the scientific conference to publication of the corresponding full paper) was found to be associated with presence of differences. These differences may be the result of sub-optimal quality regarding accuracy of data presented at conferences, which may be due to two main reasons. First, investigators often fail to review their work timely as they are making a great effort to meet the deadlines for abstract submission in a scientific meeting. Secondly, investigators tend to be more accurate and careful when submitting data for publication in peer-reviewed journals.

Other studies showed similar results regarding the differences in data between abstracts presented at surgical or paediatric meetings and subsequent published papers.³ ⁴ ⁵ For example, Bhandari et al. found that scientific abstracts presented at the Annual Meeting of the American Academy of Orthopaedic Surgeons in 1996 had differences in sample sizes when compared with the corresponding published papers. In addition, conference abstracts often did not contain information necessary to access the validity of the research findings. Also, the delay between presentation of
the abstract and publication of the full article was significantly associated with changes of the title, authors, sample size, and results between the abstract and the subsequent published article. Another similar study in the field of paediatric research showed that in about 60% of pairs of conference abstracts and subsequent published papers there were changes in sample size, and in 13% of them, abstracts outcomes changed from significant to non-significant or vice versa in manuscript forms.

Impact of research findings presented in abstracts at scientific conferences

Oral and poster presentations of research findings at scientific conferences are recognized and established as part of the scientific progress. They contribute to the prompt dissemination of scientific knowledge without the delay associated with publication of an article in a scientific journal. Also, they stimulate intellectual thinking and collaboration between scientists from all over the world. In addition, it has been shown that scientific abstracts with negative findings are less likely to be published (publication bias). Thus, results of studies that are presented in the form of conference abstracts but not in subsequent peer-reviewed publications are usually included in meta-analyses for better calculation of the studied estimates.

The medical literature includes several characteristic cases that document the impact on clinical practice of the differences between research findings presented as conference abstracts and subsequent published papers. For example, Gross et al. reported that prepublication release of findings of two carotid endarterectomy trials resulted in an inappropriate increase of the use of carotid endarterectomy in patients older than 80 years. Although both trials were limited to patients 80 years or younger in hospitals with low mortality, the increase in carotid endarterectomy use was greater in older adults after the two conference abstracts were presented. Especially, for the one pair of conference abstract and subsequent published paper, the full paper included a subgroup analysis that suggested that the impact of carotid endarterectomy on stroke reduction was statistically significant in patients younger than 68 years, but the difference was not significant in patients aged 68 years or older. However, this subgroup analysis had not been included in the conference abstract. In the second pair of conference abstract and subsequent published paper, the conference abstract stated that carotid endarterectomy should only be performed at centres with documented expertise, although the article specifically reported that ‘if perioperative risk of major stroke and death exceeds the 2.1%, the benefits of carotid endarterectomy will diminish’.

Conclusions

These observations strongly support the position that we should not hurry to incorporate in clinical decision-making findings presented at international or national scientific conferences, even if they are among the most prestigious ones. Instead, we believe that we better serve our patients by waiting at least for the evaluation of potential scientific advances by rigorous peer review. It is generally thought that the peer review process leads to improvement of the quality of published papers. This is even more applicable during the last years because most major medical journals offer the choice of ‘peer review and fast-track to publication’, an important advance in scientific publishing that combines the benefit of peer review with considerable reduction of time between submission of research findings and publication.

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References