

Pharmaceutical industry sponsorship and research outcome and quality: systematic review

Lexchin J, Bero LA, Djulbegovic B, Clark O. *BMJ* 2003; 326:1167-1170.

After reading the commentaries on their article in the Cochrane Methods Groups Newsletter, Volume 8 June 2004, the authors of this article asked for the opportunity to respond to the comments made. The following response has been prepared by J. Lexchin, LA. Bero, B. Djulbegovic and O. Clark.

We appreciate the interest that the Cochrane Collaboration has shown in our work and thank it for the opportunity to respond to the commentaries by Als-Nielsen¹ and Liberati².

Als-Nielsen states that we mixed studies that assessed funding sources and conclusions with those that assessed funding sources and results. However, we reported results, as presented, in 6 pharmacoeconomic studies and 16 studies that looked at either clinical trials or meta-analyses. She faults us for not specifically looking at whether industry funding biases the quantitative results of research. However, that was the point of our meta-analysis that showed that the quantitative results from industry sponsored research were 4.05 times (95% CI, 2.98 to 5.51) more likely to yield positive findings than research funded by other sources. We focused on assessing the relationship of funding source with results rather than conclusions for two reasons: 1) results do not always agree with conclusions and 2) bias in reporting of results is potentially more damaging because critical readers of papers should focus on results rather than conclusions.

We could have included makers of products other than pharmaceuticals in our systematic review, as she requests, but that ground had already been covered by Bekelman³ and we wanted to specifically focus on the pharmaceutical industry. A later study by Bhandari et al⁴ did include surgical trials and trials of other types of therapies as well as drug trials. They found that both surgical and drug trials had a pro-industry bias; the odds ratio for the former was 8.0 (95% CI, 1.1 to 53.2) while for the latter it was 1.6 (95% CI, 1.1 to 2.8). In their study, this difference was not statistically significant but that may have been because many of the surgical trials did not disclose their funding source.

Als-Nielsen wonders why 3 of the 15 studies in our meta-analysis were included twice. The reason, as explained in the legend of Figure 2 in our paper, was because they made compared multiple outcomes and our analysis is by outcome (i.e., results), not study.

Liberati claims that the presentation of our methods and results is too condensed to understand fully what we did. It is unclear if he is commenting on the hard copy or the on-line version. The hard copy was edited from 10 to 3 pages to conform to space requirements in the BMJ, but the online version contains much of this deleted material.

We agree with Liberati that sponsors other than pharmaceutical companies may have an interest in showing a particular outcome in studies that they fund. But we did not set out to answer that question and so did not design our methods with that question in mind.

We identified four possible causes for the bias that we observed and discussed these as far as the data we had assembled would allow. Liberati seems to want us to use data that were not available to explore these causes in more detail. He comments that we did not adequately assess the use of inappropriate comparators as a reason for our findings. As we reported, only one of the studies that we included evaluated the appropriateness of the comparators used. Furthermore none of the studies we assessed allowed us to determine who was responsible for choosing the comparator. He also criticizes us for only partially exploring the extent of publication bias, but he himself points out information on this topic was only available in 6 of the studies that we examined. Furthermore, none of these 6 looked at whether negative trials funded by the pharmaceutical industry were preferentially suppressed. Thus, like many reviews, our review is limited by the availability of data from the original studies.

Since our paper was published there have been at least three more studies⁴⁻⁶, including the one by Als-Nielsen's group, dealing with the same topic. The proliferation of research reinforces the importance of the question of funding sources and bias. We are glad to have been able to contribute to the debate on this issue.

References

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