PUBLICATION BIAS IN MEDICAL RESEARCH AND MEASURES AGAINST IT

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INTRODUCTION

Publication bias is a recognized phenomenon whereby studies with statistically significant results are more likely to be published than those finding no difference between the groups studied. We investigated the phenomenon in clinical research from articles about publication bias. Taking measures against such bias in the clinical area is important for selecting the best treatment for each case.

MATERIALS AND METHODS

In 1991, all articles about publication bias were looked up in "MEDLINE."

RESULTS

The articles about publication bias were classified, and Table 1 shows the numbers of articles by classification. Publication bias was dealt with as an important object in more than half of the articles and the number of the articles has increased.

In the articles notable descriptions of publication bias were as follows. (1) Publication bias is a recognized phenomenon whereby studies with statistically significant results are more likely to be published than those finding no difference between the study groups. (2) In clinical trials of a new treatment, studies with extreme positive and negative results have been published, whereas studies in the sensible middle ground suggesting a possible moderate effect have not been published. (3) Publication bias depends on a small sample size of studies. (4) Major reasons for nonpublication are negative results and lack of interest, and nonpublication is primarily the result of a failure to write up and submit the study results rather than rejection of submitted manuscripts. (5) Publication bias is the tendency on the part of investigators, reviewers, and editors to submit or accept manuscripts for publication. (6) Publication bias leads to a preponderance of false positive results in the literature. (7) The tendency towards publication bias is greater with observed and laboratory-based experimental studies than with randomized clinical trials. (8)
International registries of all prospective studies should be established with objectives and endpoints of the studies clearly defined. (9) It may be difficult to accumulate hidden information that investigators did not publish because of low power studies. (10) Much of what has been learned about publication bias comes from the social sciences.

**DISCUSSION**

We must recognize the existence of publication bias, and summarized results of published studies lead to a preponderance of false positive conclusions. Fig. 1 shows the distribution of natural logarithm values of hazard ratios in both published and unpublished clinical studies. It represents a model in which studies with values far from zero are more likely to be published than those with values close to zero. Sugita et al. then developed a method to eliminate the publication bias indirectly, making it possible to obtain summarized results of all studies close to true value.

We should report all studies including those without positive results, and referees should accept such studies for publication when their methods are good in quality. We can then obtain better knowledge of ineffective treatments and characteristics of cases in published studies.

**REFERENCE**


**Key word:** Publication bias

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**Table 1:** Classification of articles about publication bias and numbers of the articles indexed in "MEDLINE" by classification

<table>
<thead>
<tr>
<th>Articles</th>
<th>Important object</th>
<th>Auxiliary object</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantitative</td>
<td>Qualitative</td>
</tr>
<tr>
<td>Theses</td>
<td>9 (40.9%)</td>
<td>1 (4.5%)</td>
</tr>
<tr>
<td>Letters</td>
<td>1 (20.0%)</td>
<td>4 (80.0%)</td>
</tr>
</tbody>
</table>

Abstract: articles in which abstract (e.g. meta-analysis) is discussed
Concrete: articles in which a concrete (e.g. lung cancer) subject is discussed
Theses: reviews and original articles