Publication Bias in Blood and Marrow Transplantation:

An Analysis of the ASBMT/CIBMTR Meeting Abstracts

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The Authors Have No Relevant Disclosures
Publication Bias

• Not all research conducted ends up being eventually published

• If certain types of research are more likely to be published, then bias might be present in the published medical literature

• In particular, if positive studies are more likely to be published than negative studies, this can introduce bias
Publication Bias

Sample Size

- Hazard Ratio

+
Publication Bias

Sample Size

- Hazard Ratio +
Publication Bias

Sample Size

- Hazard Ratio +
Study Aim

• More abstracts are presented at meetings than are eventually published, and these may represent a more inclusive view of all research conducted.

• By using abstracts presented at a major meeting as a broader view of all research conducted, can predictors of publication be established?
In particular...

• Is research that has a “positive result” more likely than research that has a “negative result”

• If so, would be suggestive that publication bias is present
Canadian Study


• Found that positive abstracts were not more likely to be published than negative abstracts (37.7% vs 26.1%, p = 0.186)

Hypothesis

• As blood and marrow is a highly specialized field conducted in academic centres, publication bias will not be present
Study Methods

• Reviewed all abstracts from the 2006 Tandem Meeting

• Two authors reviewed each abstract, and categorized it by three different criteria
  • Number of Centres
  • Type of Study
  • Positive/Negative Results

• In the event of a disagreement, a third author reviewed the abstract
Publication Status

• Independently, an additional author determined if each abstract had subsequently been published

• Used the PubMed database to search by the first and last author of each abstract, compared publication to abstract
# Number of Centres

<table>
<thead>
<tr>
<th>Number of Centres</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Centre</td>
<td>380 (75.8%)</td>
</tr>
<tr>
<td>Multiple Centres</td>
<td>102 (20.4%)</td>
</tr>
<tr>
<td>Not Stated</td>
<td>19 (3.8%)</td>
</tr>
</tbody>
</table>
Number of Centres

p < 0.001 (Chi-square test)
# Type of Study

<table>
<thead>
<tr>
<th>Type of Study</th>
<th>N (%)</th>
</tr>
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<tbody>
<tr>
<td>Clinical Retrospective</td>
<td>170 (33.9%)</td>
</tr>
<tr>
<td>Clinical Prospective</td>
<td>124 (24.8%)</td>
</tr>
<tr>
<td>Basic Science</td>
<td>83 (16.6%)</td>
</tr>
<tr>
<td>Translational</td>
<td>40 (8%)</td>
</tr>
<tr>
<td>Case Report</td>
<td>21 (4.2%)</td>
</tr>
<tr>
<td>Review/Meta-Analysis</td>
<td>4 (0.8%)</td>
</tr>
<tr>
<td>Other</td>
<td>59 (11.8%)</td>
</tr>
</tbody>
</table>
Study Type

\[ p < 0.001 \text{ (Chi-square test)} \]
# Positive or Negative

<table>
<thead>
<tr>
<th>Positive/Negative</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>327 (65.3%)</td>
</tr>
<tr>
<td>Negative</td>
<td>33 (6.3%)</td>
</tr>
<tr>
<td>Not Stated</td>
<td>141 (28.8%)</td>
</tr>
</tbody>
</table>
Positive/Negative

\[ p < 0.001 \text{ (Chi-square test)} \]
Publication Status

- Biology of Blood and Marrow Transplantation (19.8%)
- Blood (17.5%)
- Bone Marrow Transplantation (15.2%)
Conclusions

• Positive abstracts are more likely to be published than other abstracts
• Clinical and basic science studies are also more likely to be published
• Full publication of negative results should be encouraged
• More structured abstracts should be encouraged, including data on funding