Publication Rate of Congress Presentations at the Spine Society of Europe

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Disclosure

First and last author are members of the Spine Society of Europe.
No additional conflict of interest.

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Background

- **Gold standard** to present studies: publication in peer-reviewed journals
- Congress presentations: often referred to and cited in routine patient care, guidelines, textbooks, education, science and publications.
- The **quality of congress abstracts** and their fate after presentation is an important indicator for the scientific activity of a society.
- The **Publication Rate (PR)** following congress presentation: accepted indicator
- Only **one US study** on this topic exists in the growing field of spine surgery (on the congresses of NASS, SRS and ISSLS).
- No study evaluated this aspect of abstracts of the Spine Society of Europe (SSE), one of the world’s most important spine societies.
Purpose of the Study

– To assess the Publication Rate of studies at the annual SSE congress
– To compare the results with results for US spine societies
– To study factors affecting publication
– To assess the consistency of congress abstracts and publications
– To serve as a quality control for the SSE

Study Design

– Review of all podium and poster presentations of the SSE congress of the years 2000-2003
Materials and Methods

- All 839 abstracts of the SSE meetings 2000-2003 were included.
  2000 n=259; 2001 n=213; 2002 n=168; 2003 n=199

- Investigation of:
  - PR in peer-reviewed journals within a period of 5 years after the congress based on a standardized PubMed-Search
  - Journals and impact factors
  - Time between congress and publication in full months
  - Subgroup analyses for different factors potentially affecting PR:
    level of evidence; type of study; significance of main result
  - Consistency of abstracts with publications (with regard to result, authors, sample size)

- Statistics included chi-square test and odds ratios (OR).
Results

– 839 included abstracts: 318 podium presentations (37.9%)
   521 poster presentations (62.1%)

– Overall Publication Rate was 37.8% (317 publications)

– Mean impact factor: 1.80 ± 1.05 (at the time of publication)

– Publications in 55 different peer-reviewed journals

   Top 5: - **Spine** (38.2%)
   - **European Spine Journal** (23.0%)
   - Journal of Spinal Disorders and Techniques (5.0%)
   - Journal of Bone and Joint Surgery - British (3.2%)
   - Journal of Neurosurgery (2.8%)
Results

- Mean period between congress and publication: $17.7 \pm 15.7$ months
- 3% of abstracts (n=25): published before congress (7.9% of all 317 publications).
## Results

<table>
<thead>
<tr>
<th>Category</th>
<th>Publication Rate</th>
<th>OR</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Podium presentations</td>
<td>48.4%</td>
<td>2.06</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Poster presentations</td>
<td>31.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Level of evidence 1 + 2</strong></td>
<td>41.9%</td>
<td>1.66</td>
<td>0.008</td>
</tr>
<tr>
<td>Level of evidence 3 + 4 + 5</td>
<td>30.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Experimental studies</strong></td>
<td>46.3%</td>
<td>1.66</td>
<td>0.001</td>
</tr>
<tr>
<td>Clinical studies</td>
<td>34.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Prospective studies</strong></td>
<td>41.2%</td>
<td>1.74</td>
<td>0.002</td>
</tr>
<tr>
<td>Retrospective studies</td>
<td>28.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Randomized studies</strong></td>
<td>52.5%</td>
<td>2.32</td>
<td>0.002</td>
</tr>
<tr>
<td>Nonrandomized studies</td>
<td>32.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Studies with a significant main result</strong></td>
<td>51.9%</td>
<td>2.40</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Studies with a nonsignificant main result</td>
<td>31.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Biomechanical studies</strong></td>
<td>55.6%</td>
<td>2.26</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Nonbiomechanical studies</td>
<td>35.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Multicenter studies</strong></td>
<td>56.7%</td>
<td>2.67</td>
<td>0.008</td>
</tr>
<tr>
<td>Single-center studies</td>
<td>32.9%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OR = Odds Ratio
– Consistency with regard to **main results**:
  – In all cases main results of abstract and publication were identical.

– Consistency with regard to **composition of authors**:
  – In 51.1% of publications: authors identical with that of the abstract
  – Abstract’s first author = first or last author of the publication in 85.8%
  – In 104 publications (32.8%): at least one additional coauthor
  – In 19 publications (6.0%): at least one additional main author (first or last)

– Consistency with regard to **sample sizes**:
  – In 217 publications (68.4%): sample size identical
  – In 59 publications (18.6%): larger sample size in congress abstract compared to publication
  – In 24 publications (7.6%): smaller sample size in congress abstract compared to publication
## Results

– Literature review and comparison:

<table>
<thead>
<tr>
<th>Author</th>
<th>Congress</th>
<th>Year of congress</th>
<th>Follow-up (years)</th>
<th>PR</th>
<th>n Abstracts</th>
<th>Podium /Poster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wang</td>
<td>North American Spine Society</td>
<td>1990-1992</td>
<td>5-7</td>
<td>40.0%</td>
<td>545</td>
<td>Podium + Poster</td>
</tr>
<tr>
<td></td>
<td>Scoliosis Research Society</td>
<td>1991-1993</td>
<td>4-6</td>
<td>47.4%</td>
<td>308</td>
<td>Podium + Poster</td>
</tr>
<tr>
<td></td>
<td>Intern. Society for the Study of the Lumbar Spine</td>
<td>1991-1993</td>
<td>4-6</td>
<td>45.4%</td>
<td>335</td>
<td>Podium + Poster</td>
</tr>
<tr>
<td>Hamlet</td>
<td>American Academy of Orthopaedic Surgeons</td>
<td>1990-1992</td>
<td>4-6</td>
<td>46%</td>
<td>1465</td>
<td>Podium</td>
</tr>
<tr>
<td>Murrey</td>
<td>American Academy of Orthopaedic Surgeons</td>
<td>1993</td>
<td>5</td>
<td>44%</td>
<td>573</td>
<td>Podium</td>
</tr>
<tr>
<td>Bhandari</td>
<td>American Academy of Orthopaedic Surgeons</td>
<td>1996</td>
<td>5</td>
<td>34%</td>
<td>465</td>
<td>unknown</td>
</tr>
<tr>
<td>Harris</td>
<td>American Academy of Orthopaedic Surgeons</td>
<td>1999</td>
<td>5</td>
<td>55%</td>
<td>318</td>
<td>unknown</td>
</tr>
<tr>
<td>Donegan</td>
<td>American Academy of Orthopaedic Surgeons</td>
<td>2001</td>
<td>5</td>
<td>49%</td>
<td>756</td>
<td>Podium + Poster</td>
</tr>
<tr>
<td>Schulte</td>
<td>Spine Society of Europe</td>
<td>2000-2003</td>
<td>5</td>
<td>37.8%</td>
<td>839</td>
<td>Podium + Poster</td>
</tr>
</tbody>
</table>

PR = Publication Rate

Publication rate of congress presentations at the SSE | © T. L. Schulte | Euro spine 2011 Oct 19-21 Milan (Italy)
Conclusion

– Publication Rate (PR) of **37.8%** within 5 years with an average impact factor of **1.80** and an average time between congress and publication of **17.7 months**

– **Podium presentations**: higher PR than posters

– Congress presentations of **higher quality** (e.g. LoE 1+2, randomized, prospective, experimental studies) achieve higher PR

  => Motivation for study groups to strive for high quality studies !

– **Publication bias** (studies with significant main result achieved higher PR) exists !

– This bias **should be resisted**, because studies without significant main results are of a comparable scientific value as those with significant main results !
Conclusion

– Publication Rate of the SSE similar to comparable US congresses (NASS 40%, SRS 47%, ISSLS 45%)

  => This shows the high quality of SSE presentations!

– The fate of the large number of unpublished abstracts (62.2%) needs to be discussed!

  => Motivation for the SSE to help presenters finish publication!

– It needs to be critically questioned if it is acceptable to cite congress abstracts in the scientific literature, that did not pass a journal’s peer-review, and to implement their results to clinical practice, guidelines, textbooks.

– Authors’ recommendation: This should be reduced to an absolute minimum! (Gold standard remains: publication in peer-reviewed journal!)

UKM