Fate of abstracts presented at the 2007-2009 Americas Hepato-Pancreato-Biliary Association meetings

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***Background*: Information presented in society meetings has not been completely vetted through a formal review process. It is not entirely clear if it is accurate or will ever be published in peer reviewed journals.**
***Materials and Methods*: A Pubmed-Medline search was performed for all abstracts presented at the AHBPA from 2007-2009 Different variables including country of origin, study center, and academic institution were examined to determine if any could predict eventual publication.**
***Results*: 33.4% of all abstracts presented materialized into full text manuscripts. The average time to publication was 14 months. In total, 46% of abstracts were published in two journals, The Journal of the Hepato-Pancreateco-Biliary Association (26%) and the Journal of Gastrointestinal Surgery (20%). Multi-centered studies had higher publication rates (39%) than single-centered studies (33%). Although domestic abstracts had higher publication rates (38%) than foreign abstracts (28%)and academic universities had higher publication rates (38%) than non-academic universities (28%) , none of the p-values reached statistical significance. None of the other variables studied were associated with publication.**
***Conclusion*: One third of all abstracts were eventually printed in peer reviewed journals. Presentations from multi-centered, domestic, and academic institutions are associated with a higher likelihood of publication, but were not statistically significant. Abstracts are most frequently featured in the journal of Hepato-Pancreateco-Biliary Association and Journal of Gastrointestinal Surgery. It is difficult to predict which posters will eventually be published. Clinicians should evaluate posters and oral presentations with a jaundiced eye, as only one third of them pass peer review.**

conferences | exhibitions | surgical education | medical education | publication rates

New research is historically shared through presentations at annual scientific meetings and publication in scientific journals (1-47). Presentations of original abstracts allow for discussion of the study before eventual full text manuscript submission. These abstracts solely summarize the current research rather than providing full details of the study. Although some will eventually be completed, it is important to note that many in fact may never be published (26).

This failure limits the spread of knowledge and the opportunity for a more in-depth peer review. Additionally, this lack of eventual publication may indicate a weakness in acceptance criteria at society meetings (1). Publication rates of meeting abstracts have been reviewed in orthopedics, urology, anesthesia, surgery, pediatrics, oncology, emergency medicine, transplantation, radiology, and ophthalmology. It has been reported that the subsequent rate of the publication of meeting abstracts as full-text articles ranged between 11% and 78% (1-47).

An evaluation was performed of posters and oral abstracts presented at the annual Americas Hepato-Pancreato-Biliary Association (AHPBA) meetings from 2007-2009. The AHPBA is a non-profit organization dedicated to easing human discomfort due to Hepato-Pancreato-Billiary disorders through education, training, innovation, research and improving patient care. The AHPBA is both an organization and a platform through which physicians can communicate concerns and ideas with other physicians dedicated to improving human life through improving the quality of healthcare of patients with problems and diseases in the liver, pancreas and biliary system. The organization hopes to spread awareness through communication of ideas at its annual meetings and updates regarding current practices in this field of surgery. We evaluated the rate at which these presentations became published, the length of time to publication, several different factors possibly affecting publication and the impact factor of the journal in which these full-length manuscripts were accepted. We sought to determine the likelihood of subsequent dissemination in full text form in respected journals and the variables associated with successful completion of the task.

Materials and Methods

Abstracts were identified from the AHPBA 2007-2009 annual meetings. The abstracts were examined with respect to research type, country of origin, number of institutions involved and author institutional affiliation. Abstracts having at least one investigator affiliated with a university department were defined as university affiliated. Abstracts were categorized on the basis of meeting sections as defined in the AHPBA program. Some categories were combined. The country of origin was defined as the country identified with the first listed author.

A computerized PubMed search was performed in 2014 to identify full text manuscripts resulting from meeting oral and poster presentations. The online search was conducted by using the first author?s family name and the title of the presentation. If no corresponding article was found, another search was performed by substituting the second author for the lead author. If this second search was unsuccessful, it was repeated using the last author?s family name and initial(s). Original full text articles corresponding to the abstracts

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Table 1. Publication metrics

	2007	2008	2009	Cumulative
Published/(total: Oral + Poster) Presentations	71/(273)	65/(214)	97/(201)	230/(688)
Percent Published (%)	26.0	30.4	48.3	33.4
Average time to Publication (months)	13.2	13.4	15.3	14

were selected. The concordance between the abstract and the published article was verified. Articles differing in the number of subjects or animals were excluded, because such abstracts were considered to represent preliminary work.

The study type was described as either clinical or basic (animal or in vitro) research for all matched abstracts. To ensure consistency, the abstracts and articles were reviewed by the same author. Clinical studies were further classified as prospective cohort, retrospective cohort or case series. Clinical Research, basic science research, and technical studies and observational reports were recorded. For those abstracts eventually published, the language, date and journal of publication were noted. The time interval, in months, between abstract presentation and full-text publication was determined. The publication rate was considered the percentage of resulting published articles. In addition, rates of publication for specific categories, countries and study types were determined.

Finally, each publication was queried in the Journal Citation Reports (JCR) database by using the Thomson Institute for Scientific Information "Web of Knowledge" and the 2011 scientific impact factor was used as an indicator of journal quality (9). The impact factor of a journal is a measure of the frequency with which the average article in a journal has been cited in a particular year or period. It is calculated by dividing the number of current year citations by the number of articles published in that journal during the previous 2 years.

Statistical Analysis. A chi-square test was used to test the study hypotheses. A p value < 0.05 is considered as statistically significant.

Results

Six hundred eighty-eight oral and poster abstracts were presented; 230 (33.4%) materialized into publications before June 2014. The average time to publication was 14 months. The number of publications per year and average time to publication is shown in Table 1. The publication rates for domestic abstracts (38%) tended to be higher than for foreign abstracts (28%, p = 0.07). Multi-centered studies had higher publication rates (39%) than single-centered (33%, p = 0.75) however the difference was not significant. Academic universities tended to have higher publication rates (38%) than non-academic universities (28%, p = 0.07). These results are highlighted in Table 2. Forty-six percent of publications were published in the following two journals, HPB 26% and the Journal of GI Surgery 20%. These results are shown in Table 2.

There was no statistical advantage (p = 0.07) for abstract origin (domestic and/or academic, or any type) on likelyhood of publication. The USA tends to have the highest successful publication rate (38%) in comparison to the other countries. Furthermore, a chi-square analysis comparing type of study center and type of abstract demonstrated that the difference between the percentage of oral and poster abstracts published by study center (multi/single) is not statistically significant (p >0.05).

Table 2. Abstract origin and institution attributes

Origin	Papers			
	Published	Unpublished	Total	P-value
Domestic	160	263	423	
Foreign	74	189	263	
				0.07
Centers				
Multi-	42	66	108	
Single	192	386	578	
				0.75
University				
No	76	195	271	
Yes	158	257	415	
				0.07
Category Total	234	452	686	

Discussion

Only 33.4% of abstracts were expanded to full-text articles. The publication rates in other disciplines were higher than we observed for AHPBA. In a Cochrane review published in 2007, 79 follow-up studies on meeting abstracts were combined, and the mean rate of full publications was found to be 44.5%, ranging from 8% to 81% (6). Earlier studies showed that the most frequent explanation for failure to submit a manuscript was lack of time (17-19). Other reasons stated by authors were lack of interest, rejection of submitted manuscript, lack of authors? coordination or that the study was ongoing (17-22). We could not find a single variable statistically associated with eventual citation in a peer reviewed journal.

The majority of articles were published within 2 years of abstract presentation, similar to earlier reports; thus, it is unlikely that our 5-7 year searching interval was inadequate (6).

The method used to identify published articles described herein has been used in several previously performed studies and is based on the last name of the first author, followed, when necessary, by the last names of the second and last authors and cross matching of the last name of the first author with the surgical subspecialty (6-8). Of 230 abstracts eventually cited as full text manuscripts, 60 (26%) of these manuscripts were presented by the Journal of HBP which is the official journal of the Americas Hepato-Pancreato-Biliary Association. The HPB has one of the highest impact factors (2.05) of the journals in which these manuscripts were published. (9).

In addition to the HBP, 46 (20%) manuscripts were showcased in The Journal of Gastrointestinal Surgery. The Journal of Gastrointestinal Surgery is published monthly and is the most cited and influential journal in the field, with more than 25,000 citations a year. In addition it is consistently ranked among the top impact factor journals in GI Surgery in the annual Thomson Reuters Journal Citation Reports. The journal publishes original research articles under the categories of 'Clinical and Translational' and 'Basic and Experimental'.

The most recognized indicator of journal quality is the impact factor. Articles of higher methodological quality are published in journals whose articles are cited more frequently (18). In our study, the median impact factor of journals accepting AHPBA related papers were higher than in previous studies (5, 11, 13, 18, 19). This would suggest that despite the observed low publication rate, abstracts seem to appear in more highly prestigious journals. Just as a

journal's impact factor reflects the journal's scientific value, publication in high impact factor journals may reflect the meeting's scientific quality.

Cartwright et al. (12) observed that between the presented abstracts and the corresponding published full-text papers, 18% major and 55% minor inconsistencies were present. The percentage of unchanged abstracts was only 27%. In another study, inconsistencies were noted in 29% of articles (13). The International Committee of Medical Journal Editors advises authors to avoid referencing conference abstracts (5, 14). Also, many peer-reviewed journals prohibit the referencing of abstracts in published articles (1, 2). This may be a consequence of inconsistencies, changes in data, changes in study approach or rejections by other journals that lead to discrepancies between abstracts and full-text articles. Given this information regarding abstract inconsistencies and the conversion rate of 33.4% of abstracts to full text manuscripts discussed in this paper, authors should be hesitant to quote abstracts in their manuscripts.

One factor that may influence the rate of publication is the country of origin (15). Our results demonstrated that only 62% of manuscripts were written in English. A relationship was reported on the concordance between the origin of abstract and the location in which the expanded article was published (17). There might have been published articles in non-English language journals. Therefore, our PubMed database search might have missed some published papers and underestimated the true publication rate. Nevertheless, popular databases, such as PubMed, provide worldwide dissemination of scientific results and an article is less likely to reach global researchers unless indexed in these databases.

Our high total abstract number may be the third possible reason for the low publication rate. Selection procedures and acceptance rates are likely to differ between meetings. It has been observed that abstracts presented at smaller meetings were more likely to be published subsequently (15-18). Since meeting organizers often wish to attract the maximum number of attendees, a less vigorous selection of abstracts may be the result of larger meetings. At smaller meetings, the abstract submission is more competitive, the peer-review process may be more stringent, and as a result the presented work is more likely to be published (17). Acceptance of an abstract for oral presentation was demonstrated to be strongly associated with full-text publication (17, 19).

The mean time to full publication determined in this study was lower than in previous reports (mean 14 months, varying from 1 to 49 months) (5, 11). An unexpected number of articles published in advance of a meeting may have lowered the mean publication time. The percentage of works published prior to a meeting was reported to be 9%?20% for other medical fields (2, 11, 18). One might hypothesize that the underlying factor for the excessive publication prior to a meeting might be the lack of a rigorous selection process on behalf of the meeting committee. It would be considered that presentation of work published more than 1 year before a meeting is redundant (18).

Abstracts originating from multi-centered studies presented at the AHPBA were more likely to be expanded to full-text articles. In the cases we studied, this finding was not statistically significant. Data examined by Scherer et al. (9) found no evidence that the number of centers contributing to a study was associated with full publication, which concurs with the findings of this study. In another study, it was demonstrated that the publication rate, but not the impact factor, was related to multi-institutional and international collaboration (9). Scientific collaboration may provide for more advanced research and enhances publication capacity. Another factor that explains the effect of collaboration is sharing of financial resources. However, we could not examine this, as abstracts did not provide funding related information for comparison with funding citation in full publications.

This low rate of publication deprives the scientific community of potentially interesting results, and it also prevents these results from being included in meta-analyses and systematic reviews, especially for uncommon diseases. In addition, from an author?s viewpoint, in personal publications lists, which are important for grant applications and career advancement, oral presentations carry far less weight than do written publications. The non-publication of original studies has other consequences: Abstracts presented at clinical and basic science research conferences are sometimes referenced, especially since electronic publication now makes them more readily available (6-12). Bhandari et al. (7) reviewed the latest editions of several major orthopaedic textbooks and found that in 53%?63% of the chapters; at least one abstract from an international meeting was referenced. Although many peer-reviewed journals prohibit the referencing of abstracts in published articles, abstracts are referenced in textbooks and routinely cited at lectures. However, contrary to the methodologic quality of published studies, the methodologic quality of abstracts presented at conferences is difficult to evaluate at the time of their submission.

Strengths and Weaknesses. Our study has several limitations. Using only the PubMed search engine may have underestimated the publication rate. Most of these presentations were published within 2 years of the abstract presentation, with a 14 month average time to publication. This time span is similar to earlier reports; thus it is unlikely that our 5-7-year searching interval is inadequate. The minimum 5-7 year follow-up period may still not have been long enough to identify all published articles. Also using the first authors? last names and then second authors, may be limiting.

Conclusions. Overall, 33.4% of abstracts presented at the AHPBA were published in PubMed-indexed journals. Twenty-six percent of the manuscripts published as full text were published by the HBP Journal, which serves as the official journal of the Hepato-Pancreateco-Biliary Association. There were no discernible factors associated with eventual citation in a peer-reviewed journal. Possibly, the most effective strategy to improve the rates of publication would be a more stringent selection process for meeting abstracts. Also, medical societies should play a role in encouraging researchers to complete and submit their abstracts for full-text publication. Furthermore, based on this 33.4% publication rate of these abstracts, (the gold standard for the dissemination of scientific information) authors should be very hesitant to cite abstracts and posters when preparing a manuscript.

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