

Full-text publications of presentations at neuroanesthesia meetings of India: A 5-year audit and analysis

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Abstract

Background and Aims: Conference presentations provide an opportunity to rapidly share findings of new research despite limitations of details and reach. Earlier studies have examined publication rates of conference presentations in anesthesia. However, conversion rate of neuroanesthesia meeting presentations to publications is unknown. We assessed the publication rate of neuroanesthesia conference presentations from India over a 5-year period and identified factors contributing to subsequent publications.

Material and Methods: Conference abstracts of the Indian Society of Neuroanaesthesiology and Critical Care (ISNACC) from 2014 to 2018 were studied with regard to conversion to full-length publications. Details of presentations were obtained from abstracts published in the journal of ISNACC and details of publications were collected by searching Google and PubMed using title and author details.

Results: Only 17.5% (40/229) of the abstracts presented at ISNACC conferences over a 5-year period resulted in subsequent full-text publications in peer-reviewed journals. Prospective cohort studies (OR [95% CI] 2.84 [1.05–8.56], $P = 0.048$), randomized trials (OR [95% CI] 2.69 [1.04 to 7.9], $P = 0.053$), and abstracts from public institutions (OR [95% CI] 3.44 [1.4 to 10.42], $P = 0.014$) were significantly associated with publications after conference presentations.

Conclusion: The conversion rate of conference presentations of neuroanesthesia society of India into journal publications is significantly low. There is need for neuroanesthesia community of India to work together to improve the translation of presentations into publications.

Keywords: Audit, India, meetings, neuroanesthesia, presentations, publications

Introduction

The annual medical conferences provide opportunities for academicians, clinicians, and researchers to share their new research findings with the participating audience without delay. Abstracts submitted to the conferences are mostly read by participants of the conference or/and by the readers of the respective society journals, if the conference abstracts are published. Publications of full research work in scientific journals allow meticulous peer-review, enhance credibility,

result in wider dissemination and are usually considered as the end-point of research efforts. However, not all conference abstracts result in subsequent full paper publications thereby limiting the scope of meaningful application of research findings in clinical practice.

Earlier studies have shown varied conversion rates of conference presentations to scientific publications. Within the specialty of anesthesia, the publication rates differed significantly between abstracts presented at Indian (5%) and American Society of Anesthesiologists meetings (22%).^[1] Currently, knowledge

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gap exists regarding the rate of conversion of neuroanesthesia conference presentations into publications and factors that contribute to consequent publications. To understand these aspects, this study was conducted.

The Indian Society of Neuroanaesthesiology and Critical Care (ISNACC) conducts its annual conference in January–February and is attended by about 400 anesthesiologists with interest in providing anesthesia and critical care services for neurosurgical patients. The conference provides a platform for trainees and practitioners to present their research work. The primary objective of this study was to assess the rate of conversion of neuroanesthesia conference presentations from India into scientific publications in peer-reviewed journals. Our secondary objective was to identify factors related to conference presentations that contributed to subsequent publications.

Material and Methods

The National Institute of Mental Health and Neurosciences human ethics committee granted waiver vide letter NIMHANS/IEC/2020-2021 dated 18 May 2020 as this study involved retrospective extraction of information from publically available resources.

We extracted details of the conference abstracts of ISNACC for a 5-year period from 2014 to 2018 from the online archives of the *Journal of Neuroanaesthesiology and Critical Care (JNACC)*, the official journal of ISNACC. We searched for publications till March 2020. The 2-year time period after the last conference (January 2018) was considered appropriate, as previous studies have reported median time of 18 months for publication of conference presentations.^[1] The details of abstracts of conference presentations were extracted into a Microsoft Excel worksheet for analysis. The data included title of the presentation, names of first and corresponding authors, year of presentation, type of research work (case report or original research), hospital name, type of hospital (academic or nonacademic), designation of the presenting author (trainee or consultant), place of research (public or private), funding status and broad area of research.

Next, we used PubMed and Google to search for full-text publications of the conference presentations using (1) title of abstract of the conference presentation and (2) full names of first and corresponding authors. We extracted data regarding publication as follows: name of the journal, time for publication from presentation, PubMed indexing of the journal and its impact factor and citations for the

published papers. We explored whether certain factors such as designation of the presenting author (trainee vs. consultant), hospital type (academic vs. nonacademic), work setup (public vs. private), outcome of randomized control trial (RCT) (positive, negative or neutral) and type of presentation (case report vs. original research) were likely to be associated with conversion of conference presentation to subsequent full-text journal publication.

Since this study was exploratory in nature, no formal sample size calculation was performed. A 5-year data was deemed as adequate to provide reasonable estimate of conversion rate of presentations to publications based on similar previous studies.^[2,3] Data were analyzed using R software version 3.5.2. Interval scale variables are presented as mean \pm standard deviation, while nominal variables are presented as frequencies and percentages. Binary logistic regression was used for prediction of publication, and results presented as estimates and odds ratios (OR) with 95% confidence intervals (CI). A value of $P < 0.05$ was considered as level for statistical significance.

Results

A total of 229 papers were presented at the annual conference of ISNACC from 2014 to 2018 with 29, 26, 52, 69, and 53 papers for the years 2014, 2015, 2016, 2017, and 2018, respectively. As of March 2020, only 40 of the 229 presentations (17.5%) culminated into scientific publications. The conversion of presentations to publications were 6 (21%), 8 (31%), 11 (21%), 11 (16%) and 4 (8%) for the presentations made during 2014, 2015, 2016, 2017 and 2018, respectively [Figure 1]. The mean time for publication from the presentation was 22.97 ± 19.45 months with the fastest time for publication for case reports (4.4 ± 4.9 months)

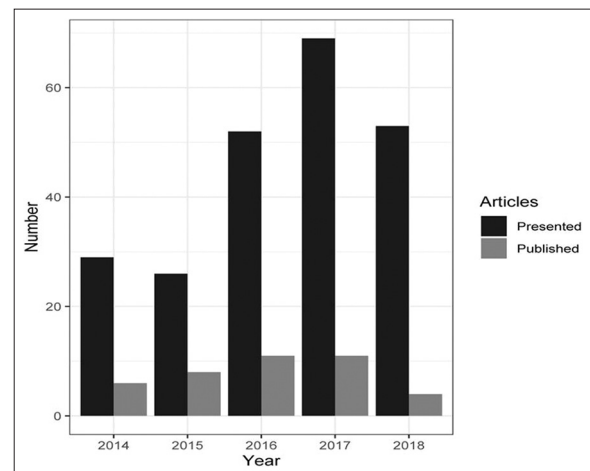


Figure 1: Comparison of conference presentations and their scientific publications from 2014 to 2018

and the slowest time for RCTs (27.4 ± 23.6 months). The majority [29/40 (72.5%)] of the presented work was published in PubMed indexed journals. The distribution of publications was almost similar in Indian and International journals 18 (45%) and 22 (55%), respectively. The mean impact factor of journals that published these papers and the average citation counts for published manuscripts were 0.65 ± 0.63 and 2.1 ± 2.74 , respectively. The majority of the published RCTs reported positive outcomes compared to negative or neutral outcomes 11 (64.7%) vs. 6 (35.3%) [Table 1].

The characteristics of presentations (study type, study design, nature of the hospital, setting, designation of the first author, and funding status) that resulted in subsequent publications and of those that remained unpublished at the time of assessment are shown in Table 2.

Table 1: Descriptives of variables within published manuscripts; values expressed as mean±SD or as number (percentages)

Variable	Levels	Descriptives
Presentation to publication time (months)	Overall	22.97±19.45
	Case report	4.4±4.9
	Prospective cohort	25.4±14.5
	RCT	27.4±23.6
	Retrospective cohort	20.7±13.3
Mean impact factor of journals		0.65±0.63
Citation count of published papers		2.1±2.74
Publication in PubMed indexed journals		29/40 (72.5)
Journal for publications	Indian	18 (45)
	International	22 (55)
Outcomes (within published RCTs)	Positive	11 (64.7)
	Negative/neutral	6 (35.3)

Table 2: Descriptives of predictors within published and nonpublished manuscripts; values expressed as number (percentages)

Predictor	Levels	Not published	Published
Study type	Basic science	1 (0.53)	0 (0)
	Case report	57 (30.16)	6 (15)
	Clinical study	131 (69.31)	34 (85)
Study design	Case report	56 (29.63)	6 (15)
	Prospective cohort	46 (24.34)	14 (35)
	RCT	59 (31.22)	17 (42.5)
	Retrospective cohort	25 (13.23)	3 (7.5)
	Systematic review	3 (1.59)	0 (0)
Academic institute	No	16 (8.51)	1 (2.5)
	Yes	172 (91.49)	39 (97.5)
Hospital type	Public	126 (67.02)	35 (87.5)
	Private	62 (32.98)	5 (12.5)
Author	Consultant	86 (52.76)	20 (50)
	Trainee	77 (47.24)	20 (50)
Funding	Funded	1 (100)	0 (0)
	Nonfunded	0 (0)	40 (100)

We explored certain factors that we believed could be predictive for publication of conference papers. Study design and hospital type were predictive of publication of conference presentations. Prospective cohort studies and RCTs (as compared to case reports and retrospective studies) were significantly associated with journal publication with OR (95% CI) of 2.84 (1.05 to 8.56), $P = 0.048$, and OR (95% CI) of 2.69 (1.04 to 7.9), $P = 0.053$, respectively. The presentations from publicly funded hospitals were significantly associated with greater conversion to publications with OR (95% CI) of 3.44 (1.4 to 10.42), $P = 0.014$ compared to private hospitals. Workplace setup (academic vs. nonacademic) and first author (trainee vs. consultant) were not associated with the likelihood of publication of conference presentations [Table 3].

The key areas of research in neuroanesthesia and neurocritical care in India as evidenced by presentations over a 5-year period and their subsequent publications are shown in Figure 2. Among the specific areas, neuropharmacology, neurovascular diseases and neuromonitoring were the top three areas of research that were presented during the ISNACC conferences in the 5 years that we studied. Amongst the same presentations, topics related to drugs, traumatic brain injury, monitoring, and airway were the top four specific research areas that resulted in subsequent publications.

Discussion

A small proportion of abstracts presented at ISNACC conferences resulted in subsequent publication as complete

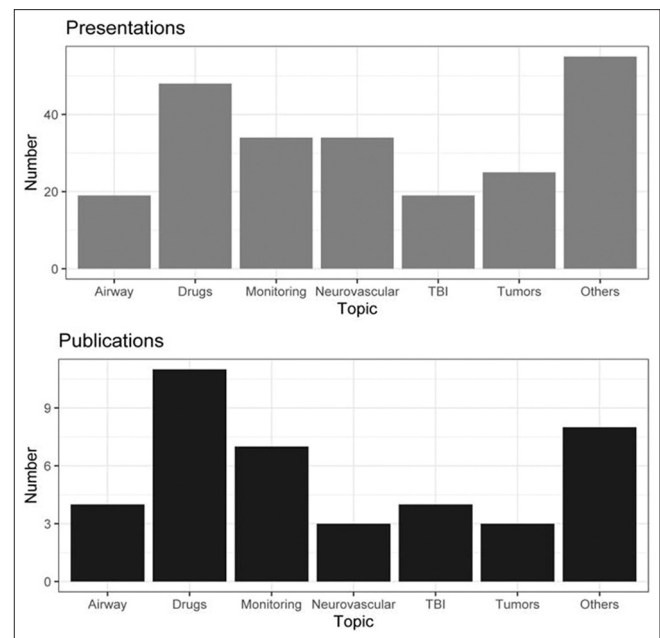


Figure 2: Areas of research and publications in neuroanesthesia and neurocritical care in India as per the conference presentations and their publications

Table 3: Regression model results for prediction of publication of presented articles

Predictor	Levels	Estimate (95% CI)	OR (95% CI)	P
Study design (Ref: case report)	(Intercept)	-2.23 (-3.19, -1.47)	0.107 (0.04, 0.23)	<0.001
	Prospective cohort	1.04 (0.05, 2.15)	2.841 (1.05, 8.56)	0.048
	RCT	0.99 (0.04, 2.07)	2.689 (1.04, 7.9)	0.053
	Retrospective cohort	0.11 (-1.5, 1.53)	1.12 (0.22, 4.61)	0.879
Workplace (Ref: nonacademic)	(Intercept)	-2.77 (-5.67, -1.18)	0.063 (0.003, 0.306)	0.007
	Academic setup	1.29 (-0.35, 4.2)	3.628 (0.707, 66.448)	0.218
Hospital type (Ref: private)	(Intercept)	-1.28 (-1.67, -0.92)	0.278 (0.188, 0.399)	<0.001
	Public	1.24 (0.33, 2.34)	3.44 (1.4, 10.42)	0.014
First author (Ref: consultant)	(Intercept)	-1.46 (-1.97, -0.99)	0.233 (0.139, 0.37)	<0.001
	Trainee	0.11 (-0.59, 0.81)	1.117 (0.557, 2.24)	0.754

articles in peer-reviewed journals. Prospective studies and publicly funded institutions contributed to subsequent publications after conference presentations.

The proportion of abstracts presented at the meetings of four anesthesia societies- American Society of Anesthesiologists (ASA), International Anesthesia Research Society (IARS), Anaesthesia Research Society and Canadian Anesthetists' Society in 1985 that resulted in publication was 44% at 3 years and 50% at 5 years after presentation.^[4] In another study reviewing the abstracts of survey research from the annual meetings of the ASA, Association of Anaesthetists of Great Britain and Ireland and IARS from 2011 to 2014, the authors observed that 43/99 (43%), 0/76 (0%) and 7/30 (23%) abstracts, respectively, were subsequently published.^[5] The publication rate of abstracts of presentations at the Turkish Society of Anaesthesiology and Reanimation (TARD) congresses between 2011 and 2014 was 42.3%.^[6] The rate of publications of abstracts of Society for Obstetric Anaesthesia and Perinatology annual meetings from 2010 to 2014 was noted to be lower at 26.8%.^[7] The publication rate for veterinary anesthesia conference was however high at 73.5% with the average time for publication of 24 months from presentation.^[8] Another study evaluated the publication rates of abstracts of German Anaesthesia Congress (GAC) and European Society of Anaesthesiologists (ESA) meeting in 2000 and 2005. This study observed improvement in publication rates from 39% to 47% during the 5-year period for GAC but not for ESA meeting (34% and 32%).^[9] In our study, we observed decrease in publication rate from 21% for presentations made in 2014 to 8% for presentations made in 2018. An earlier study evaluating publication of abstracts of ESA meeting of 1995 had observed a 42% (199/472) conversion rate with mean time to publication of 16.8 months.^[10] The same group of authors evaluated the publication rates of abstracts of the Spanish Society of Anaesthesiology conference in 1992, and noted that only 17% (84/491) abstracts were published, with an average time to publication of 1.8 years.^[11] Our

findings demonstrate that the rate of conversion of abstracts of ISNACC meetings into publications is significantly lower than that of most meetings of other anesthesia societies.

In a review of abstracts of RCTs presented at ASA meetings from 2001-2004, the authors observed that 564/1052 (53.6%) presentations proceeded to publication. Abstracts with positive study outcomes were associated with publication suggesting possibility of publication bias.^[12] Majority (85%) of the publications of ISNACC conference presentations were clinical studies and the rest were case reports. The proportion of clinical studies was 73% while case reports were 2.5% in a study evaluating publication of abstracts of TARD conferences.^[6] In our study, publications in national journals were 45% while for TARD abstracts this was 26%.^[6] Prospective cohort and RCT designs were more likely to be published in our study than case reports. This is likely due to editorial policies of many anesthesia journals which do not publish case reports. Similarly, conversion rate of abstracts from publicly-funded hospitals was more compared to private hospitals. The probable reasons could be that publication in peer-reviewed journal forms an essential component of career advancement in publicly-funded institutions while such requirements are not applicable in private hospitals.

Apart from the factors studied, the authors believe that, there could be other reasons for poor conversion rate of neuroanesthesia conference presentations to publications such as poor quality of research work, or lack of interest, incentive or time for authors in pursuing publication after conference presentation. To improve publication rates, ISNACC can initiate research methodology workshops for authors and researchers to improve their understanding of conducting good research. Secondly, scientific committees of neuroanesthesia conferences should perform rigorous peer-review of abstracts especially with regard to methodological aspects and adherence to guidelines for conference abstracts. Thirdly, providing grants for research and assistance in manuscript writing will help authors in performing good quality studies and facilitate

translation of research work into scientific publications. Responsibilities of researchers in improving the chances of publication include identifying good research questions, writing protocols before the start of study, applying for funding, adhering to proper conduct of research, ensuring essential requirements are met (ethics approval, patient consent, trial registration) and conforming to reporting guidelines during submission of manuscript for publication.

This is the first study to assess rate of conversion of conference presentations of neuroanesthesia specialty into scientific publications. This study also assessed and informs how conference presentations and their subsequent publications have taken place over a 5-year period and factors contributing to subsequent publications. Our study however has certain limitations. Firstly, it is possible that few conference presentations might still be under consideration for publication, especially of latter years. We, however, had provided a 2-year window considering this is as adequate time for publication from presentation based on the findings in previous studies. Secondly, there could be some publications that are not available on either PubMed or Google Scholar, and hence may have been missed by us. Thirdly, we searched two search engines (Google and PubMed) independently and separately using 1] the title and 2] author names [both first and corresponding author] for identifying and matching the publication of a conference presentation. The first assessment was again verified by a second person. These measures were undertaken to ensure correct identification of publication attributable to the conference presentation and also to not miss any publication arising from presentation. Despite these intensive measures, it is possible that some publications may be missed if the first and corresponding author names were changed during subsequent publication or the title was completely different.

To conclude, conversion rate of conference presentations of neuroanesthesia society of India into full-text publications in scientific journals is significantly low compared to other anesthesia societies. Prospective research and research conducted in publicly-funded institutions were more likely to result in subsequent publications. Low rate of conversion of presentations into publications results in wastage of resources, duplication of scientific research, and delays in availability

of new knowledge, hence corrective measures are needed to address this issue.

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Conflicts of interest

There are no conflicts of interest.

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