

## SHORT REPORT

# Publications in Vascular Journals: Contribution by Country

M.K. Lazarides,<sup>1\*</sup> E.S. Nikolopoulos,<sup>1,2</sup> G.A. Antoniou,<sup>1,2</sup>  
G.S. Georgiadis<sup>1</sup> and C.E. Simopoulos<sup>2</sup>

<sup>1</sup>Department of Vascular Surgery, and <sup>2</sup>2nd Department of Surgery, Demokritos University Hospital, Alexandroupolis, Greece

*The geographical origin of all published papers in four major vascular journals as well as the “vascular papers” in two high impact “general” surgical journals during a four year period (2003–2006) were examined by search of their electronic editions. As an index of high quality papers, the randomized controlled trials (RCT’s) by country were also examined. A total of 3422 papers were searched in the four vascular journals (115 RCT’s) while 144 “vascular” papers (19 RCT’s) were located in the two “general” surgical journals. It was not surprising that USA and western European countries were having the largest contribution to the vascular literature.*

*Keywords: Vascular surgery; Bibliometrics; Publications by country.*

The aim of this study was to analyze the variation in publications by country of origin in the field of vascular surgery.

### Report

We examined the total number of published papers in all major vascular journals during a four year period (2003–2006) and their geographical origin by manual search of electronic editions. Editorials, articles on surgical ethics and letters to the editor were excluded. We included vascular journals that had a mean impact factor of at least 1.0 for the years 2003, 2004 and 2005.<sup>1</sup> Four journals were identified, namely the Journal of Vascular Surgery (JVS), the Journal of Endovascular Therapy, the European Journal of Vascular and Endovascular Surgery (EJVES) and the Annals of Vascular Surgery. Only the countries of the institution from which the article originated were taken into account. In papers where institutions of more than one country were involved or in multinational trials, only the

country of the corresponding author was taken into consideration. Additionally in an effort to review the percentage of vascular papers in “general” surgical journals, the two leading journals of this category, according to their impact factor for the years 2003–2006, were also examined (Annals of Surgery and British Journal of Surgery). In these two journals the classification of a “vascular paper” was made by a senior vascular surgeon based on its title and in some doubtful cases after reading the abstract. The total numbers of publications in the four major vascular journals as well as the “vascular papers” in the two leading “general” surgical journals from each country are presented in Table 1. As an index of high quality papers, the randomized controlled trials (RCT’s) by country were also examined separately. The classification of a study as RCT was based on its study design description. In Table 2 the top four countries ranked according their total number of papers in each one of the examined journals are presented. RCT’s represent the higher level of evidence in the hierarchy of studies<sup>2</sup> and were used as an index of superior quality articles in our study. Meta-analyses and systematic reviews although being of equal or even higher value in this hierarchy of evidence, necessitate less resources, effort and time to be completed and were

\*Corresponding author. M. Lazarides, Demokritos University of Thrace, Department of Vascular Surgery, Marathonos 13, N. Chili, Alexandroupolis 68100, Greece.  
E-mail address: [mlazarid@med.duth.gr](mailto:mlazarid@med.duth.gr)

**Table 1. The top twenty-five countries ranked according to the total number of published articles in the examined journals**

	Total number of articles	RCT's*	Articles/10 <sup>6</sup> inhabitants <sup>3</sup>	Articles/10 <sup>3</sup> physicians <sup>4</sup>
1 USA	1343	21	4.5	1.8
2 UK	526	41	8.6	3.7
3 Netherlands	229	29	13.8	4.3
4 Italy	175	11	3	0.7
5 France	165	3	2.7	0.8
6 Germany	154	5	1.8	0.5
7 Japan	145	0	1.1	0.5
8 Sweden	83	8	9.2	2.8
9 Austria	79	0	9.6	2.8
10 Canada	76	0	2.2	1
11 Switzerland	65	5	8.6	2.4
12 Turkey	55	0	0.7	0.5
13 Australia	54	1	2.6	1.1
14 Greece	52	1	4.8	1.1
15 Belgium	43	2	4.1	0.9
16 Spain	42	1	1	0.3
17 Korea	36	0	0.7	0.4
18 Ireland	35	2	8.6	3
19 China	31	0	0.02	0.01
20 Finland	29	0	5.5	1.7
21 Norway	29	0	6.2	2
22 Brazil	21	1	0.1	0.1
23 Poland	18	1	0.46	0.2
24 Denmark	15	2	2.7	0.9
25 N. Zealand	13	0	3.1	1.3

\* RCT's: Randomized control trials.

not used as quality indices in this article. Results relative to the population and to the number of physicians of each country were also obtained (Table 1).<sup>3,4</sup> A total of 3422 papers were searched in the four major vascular journals (among them 115 RCT's) while 144 "vascular" papers (among them 19 RCT's) were located in the two "general" surgical journals searched. The "vascular" papers represented 11.5% of the total number of articles in the British Journal of Surgery (109 out of 940) and 3.7% (35 out of 924) in the Annals of Surgery. The vascular RCT's represented 13% (19/144) of the vascular papers in the general journals but only 3.3% (116/3422) of the papers in the four Vascular journals ( $p < 0.001$ , chi square test).

**Table 2. The top four countries ranked according to their total number of papers in each one of the examined journals. The total numbers of papers by country are also reported**

	IF**	1st	2nd	3rd	4th
Journal of Vascular Surgery	3.13	USA 896	UK 103	Japan 78	France 67
Journal of Endovascular Therapy	2.09	USA 108	Germany 59	The Netherlands 53	UK 33
European Journal of Vascular and Endovascular Surgery	1.82	UK 296	The Netherlands 81	Italy 52	Germany 42
Annals of Vascular Surgery	1.05	USA 288	France 38	Japan 31	Italy 24
Annals of Surgery*	6.05	USA 20	France 3	Italy 3	UK 3
British Journal of Surgery*	3.69	UK 71	The Netherlands 10	Sweden 6	Australia 4

\* Only vascular papers were included.

\*\* Mean Impact Factor 2003–2005.

## Discussion

This study describes the volume of published research in the field of Vascular Surgery and its geographical origin during a specific time period in six journals. Similar studies have been published in other medical fields such as General Surgery and Intensive Care Medicine.<sup>5,6</sup> The scientific productivity of a country is expected to be analogous to the total amount of resources spent on medical research and the size of its population. Therefore it is not surprising that USA and Western European countries have the largest contribution to the Vascular Surgery literature. Similar observations have been found in other medical fields.<sup>5</sup> An interesting observation of this study is that Americans prefer to publish mostly in American vascular journals and they are by far the main contributors in these three Journals while USA was ranked 7th with only 29 papers in the EJVES, where western Europeans were the main contributors (Table 2). In an effort to widen the communication of the vascular communities at both sides of the Atlantic the editors of the EJVES and JVS recently decided to have reciprocal publication of abstracts in both journals.<sup>7</sup>

Surprisingly UK and The Netherlands contributed more than USA to RCT's indicating a degree of ambivalence to RCT's of vascular surgeons in North America. The Netherlands, UK and other small European countries outranked USA when correction was made for population size, these findings match with the findings of Van Rossum *et al.* reporting publications of General Surgery by country.<sup>5</sup> The Netherlands was also the major producer of vascular publications per physician with 4.3 articles/10<sup>3</sup> physicians (Table 1). Potential sources of error in this article were the limited number of journals included in the study and the exclusion of non-English vascular journals; however these journals were not qualified to be included according to the selection criteria set.

An additional interesting finding of this study is that a noticeable number of high quality "vascular"

papers are submitted and published in “general” surgical journals with a high impact factor. The same is true and for high-impact “general” medical journals such as the Lancet and New England Journal of Medicine. Vascular surgeons should be advised to consult these general journals as well.

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