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SCIENTOMETRIC ANALYSIS OF JOURNAL OF ANTIMICROBIAL CHEMOTHERAPY (1975-1984)

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ABSTRACT

This paper attempts to highlights the quantitative assessment of status of the Journal by way of analyzing the various features of Journal of Antimicrobial Chemotherapy (Main Journal Issues). During 1975-1984 a total of 2163 Articles were published in the Journal by researchers in various countries.

KEYWORDS:

Antimicrobials, Authorship Pattern, International collaboration, Communication channels.

1.0 INTRODUCTION

The *Journal of Antimicrobial Chemotherapy* is among the foremost international journals in antimicrobial research. Our readership includes representatives of academia, industry and health services, and includes those who are influential in formulary decisions.

Published monthly, the Journal features original articles on the laboratory aspects and clinical use of antimicrobials including antibacterial, antiviral, antifungal, and antiprotozoal agents.

In addition to the wealth of primary papers, the journal carries review articles offering in-depth discussion on matters of topical concern. Lively leading articles offer incisive coverage of recent advances and controversies. The journal also published supplements along with some of the main issues.

2 OBJECTIVES OF THE STUDY

The main objective of the study is to analyze the content of Journal of Antimicrobial Chemotherapy and make the quantitative assessment of status of the Journal by way of analyzing the following features of Journal:

2.1 Year wise productivity of literature.

2.2 Channels of Output.

2.3 Authorship Pattern

2.4 Rank list of authors: Author at any position

2.5 Rank list of authors: Author at first position.

2.6 Country wise productivity**.**

2.7 Place wise Productivity.

2.8 Frequency of Keywords.

2.9 Collaborative Pattern.

The International collaborative production of articles is the simultaneous action of many people who try to combine their ideas to make a new one. In fact "collaborative" is the process where two or more people work together toward a common goal and they don't required leadership.

3 SCOPE & LIMITATION OF THE STUDY

Scope of study is restricted to the "Journal of Antimicrobial Chemotherapy" published during 1975 to 1984. The papers presented in the Journal are analyzed using content analysis technique.

The present study is limited to the total numbers of 2163 papers published during 1975 to 1984.

4 ANALYSIS OF "JOURNAL OF ANTIMICROBIAL"

In views of the objectives of the present study, analysis of "Journal of Antimicrobial Chemotherapy" is presented further.

4.1. Year wise productivity of literature.

The attempt was made to analyse the year wise productivity of Journal during the first decade and is presented in table no. 4.1.

Table No. 4.1: Year wise productivity of literature

Sr. No.	Year	Vol. No.	No of Volumes	No of Issues	Main Issue Articles	Total no of Articles
1	1975	1	1	4	88	88
2	1976	2	1	4	73	80
3	1977	3	1	6	118	165
4	1978	4	1	6	125	159
5	1979	5	1	6	149	190
6	1980	6	1	6	157	162
7	1981	7 8	2	12	182	333
8	1982	9 10	2	12	176	297
9	1983	11 12	2	12	206	400
10	1984	13 14	2	12	197	289
	Total	**14**	**14**	**80**	**1471**	**2163**

From the above table 4.1, it is seen that during the decade (1975-1984) total no of articles published was 2163. However along with the 80 main issues publishing 1471 publications and 37 supplements publishing 692 articles. It has been observed that highest no of articles were published during 1983 i.e. 400 articles collectively.

In 1975-1976 single volume was published, from 1981 two volumes per year and monthly issue started publishing.

4.2 Channels of Output

Channel, in communications, refers to the medium used to convey information from a sender (or transmitter) to a receiver. Researchers communicated their publication through variety of communication channels.

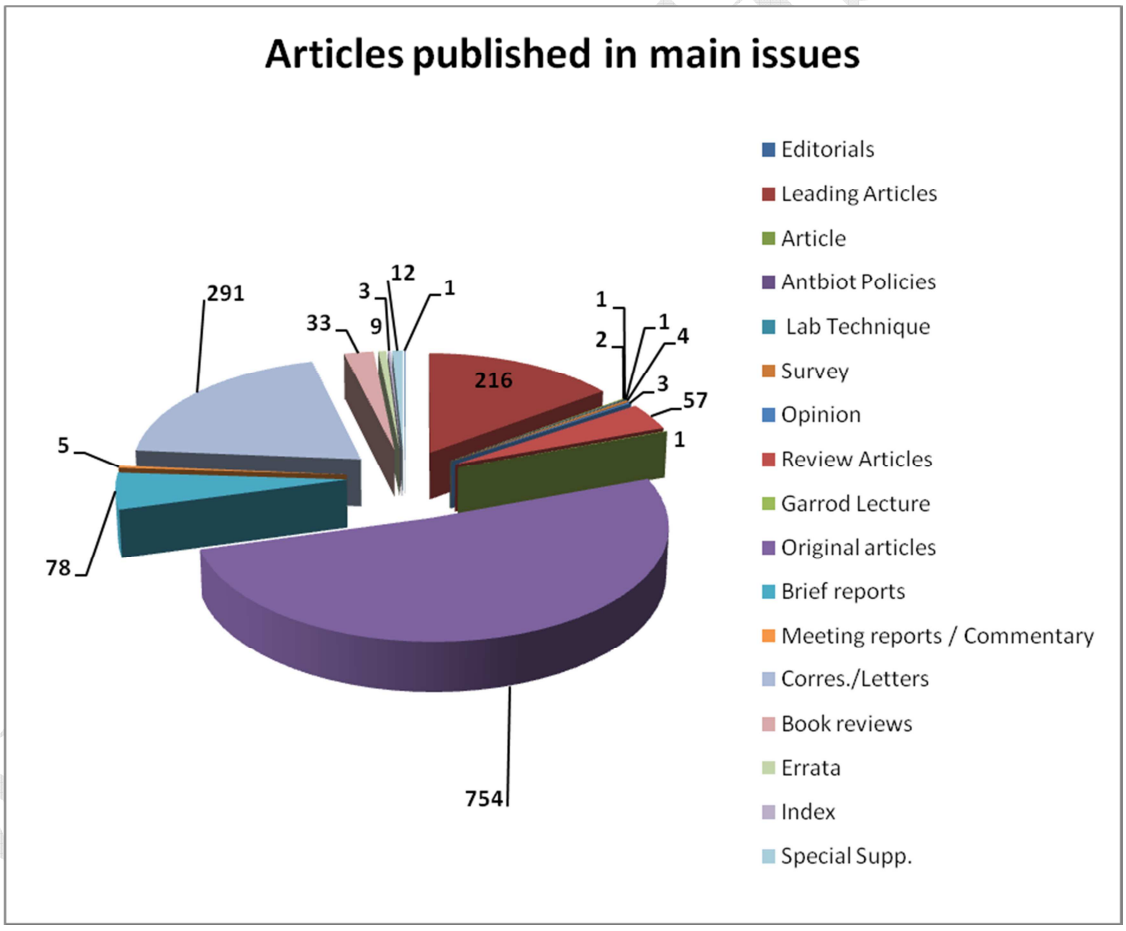

Figure No. 4.2: Channels of output from Journal Issues

It can be observed from Figure No.4.2 that, majority of articles (1029) published under original articles of the Literature published during the decade (1975-1984) followed by Correspondence or Letters 291 and the Brief reports (78). The total content Journal of Antimicrobial Chemotherapy is Editorials, Article, Antbiot Policies, Lab Technique, Survey, Opinion, Review Articles, Garrod Lecture, Meeting reports / Commentary, Book reviews, Errata, Index, Special Supplements.

4.3 Authorship pattern (Main articles)

Table no.4.3: Authorship pattern

Year	Single Author	Number of papers with various authorship						Total Publications
	1	2	3	4	5	6	More than Six	
1975	51	23	10	2	1	0	1	88
1976	34	12	13	9	2	3	0	73
1977	43	26	24	18	5	1	1	118
1978	44	33	27	12	8	1	0	125
1979	40	42	24	20	16	4	3	149
1980	44	38	31	25	10	6	3	157
1981	44	31	49	31	18	6	3	182
1982	45	46	34	21	23	4	3	176
1983	41	44	58	29	16	10	8	206
1984	37	35	48	39	22	13	3	197
Total	**423**	**330**	**318**	**206**	**121**	**48**	**25**	**1471**
%	**28.76**	**22.43**	**21.62**	**14.00**	**8.23**	**3.26**	**1.70**	**100**

From the above table no.4.3 its observed those multiple authors (71.24) are predominate than single authors (28.76). Authorship trend is towards single author.

4.4 Rank list of Top Five Authors: Author at any position.

Table no.4.4: Rank list of authors: Author at any position

Sr. No.	Authors	Rank	No. of Articles	%
1	Richard Wise	1	76	1.18
2	Ian Philips	2	54	0.84
3	J. D. Williams	3	33	0.51
4	D. S. Reeves	4	31	0.48
5	Harold C. Nue	5	29	0.45
6	J. M. T. Hamilton-Miller	5	29	0.45

The author which the is most preferred by researchers, that document is most important to keep in the library for that purpose author ranking is essential to librarians as well as researchers. The top most cited author are "Richard Wise" scores the top position with 76 (1.18%) articles, second rank goes to 'Ian Philips with 54 (0.84%) publications, followed by "Ian Philips' with 33 (0.51%) publications respectively by publishing as a any position authors.

4.5 Rank list of top five authors: Author at first position.

Table No. 4.5: Rank list of authors: Author at first position

Sr. No.	Authors on First Position	Rank	Articles	%
1	D. S. Reeves	1	21	1.27
2	Harold C. Neu	2	19	1.15
3	Richard Wise	2	19	1.15
4	Ian Philips	3	18	1.09
5	Pramod M. Shah	4	12	0.73
6	R. Labia	5	10	0.61

The author which the is most preferred by researchers, that document is most important to keep in the library for that purpose author ranking is essential to librarians as well as researchers. The top most cited author are "D. S. Reeves" scores the top position with 21 (1.27%) articles, second rank goes to 'Harold C. Neu and Richard Wise with 19 (1.15%) publications, followed by "Ian Philips' with 18 (1.09%) publications respectively by publishing as a first authors.

4.6 Country wise productivity.

A total number of 4907 Countries comes in during 1975-1984 are distributed in different geographical areas as shown in Table No.4.6 Geographical distribution of articles provides information of the rank of countries active in a particular subject field and their relative contribution.

Table No. 4.6: Country wise productivity top ten

Sr. No	Country	Articles	Rank	%
1	England	1635	1	33.32
2	U.S.A	1146	2	23.35
3	France	240	4	4.89
4	Sweden	219	5	4.46
5	West Germany	163	6	3.32
6	Belgium	160	7	3.26
7	Italy	124	8	2.53
8	Canada	118	9	2.40
9	Netherland	103	10	2.10

The table shows that England scored the top position with 1635 articles (33.32%), second rank goes to U.S.A. with 1146 (23.35%) articles, followed by France with 240 (4.89%) articles respectively.

4.7 Place wise Productivity.

A total number of 4907 Place comes during 1975-1984 are distributed in different geographical areas as shown in Table No. 4.7 Place Wise Productivity of citations provides information of the rank of Places active in a particular subject field and their relative contribution.

Table No.4.7 Place wise Productivity top ten

Sr. No.	Place	Articles	Rank	%
1	London	525	1	10.81
2	Birmingham	255	2	5.25
3	New York	134	3	2.76
4	Bristol	125	4	2.57
5	Greenford	97	5	2.00
6	Brussel	88	6	1.81
7	Paris	85	7	1.75
8	Athens	77	8	1.59
9	Frankfurt	73	9	1.50
10	Ohio	72	10	1.48

The Table No. 4.7 shows that London scored the top position with 525 (10.81%) articles; Second rank goes to Birmingham with 255 (5.2%) articles, followed by the third rank goes to New York with 134 (2.7%) articles respectively.

4.8 Frequency of Keywords.

The articles were again classified on the basis of key words assigned as per thought content of the articles. The analysis of overall published articles during 1975-1984 based on keywords Reveals, micro level of classification and denotes exact theme of the articles on which Author is writing, which is presented in table No. 4.8

Table No. 4.8 Frequency of Keywords top ten

Sr.No	Key Words	Rank	Appeared	%
1	Humans	1	495	3.71
2	Microbial Sensitivity Tests	2	352	2.64
4	Anti-Bacterial Agents/pharmacology	4	227	1.70
5	Bacteria/drug effects	5	222	1.67
6	Time Factors	6	199	1.49
7	Adult	7	156	1.17
8	Bacterial Infections/drug therapy	8	154	1.16
9	Female	9	151	1.13
10	Animals	10	145	1.09

From the above Table No. 4.8 It can be observed that the most frequent keyword occurred during publication was 'Humans' 495 (3.71%), 'Microbial Sensitivity Tests' 352 (2.64%) and 'Anti-Bacterial Agents/pharmacology' appears 227 (1.70%).

4.9 Collaborative Pattern between the countries.

The following tables provides the collaborative pattern across the countries

Table No.4.9 Articles published in the main issues.

Table No.4.9 Collaborative Patterns in the articles

Year	Single Country	Collaboration	Total No. of Articles
1975	88	0	88
1976	73	0	73
1977	114	4	118
1978	124	1	125
1979	149	0	149
1980	155	2	157
1981	177	5	182
1982	173	3	176
1983	190	16	206
1984	188	9	197
Total	**1431**	**40**	**1471**

4.9.1 Collaborative Pattern between the countries

It had been observed that out of 40 collaboration articles 16 (40%) articles for the year 1983. Top most 6(3%) department in the decade 1975-1984 is Unite Fonctionnelle de Greffe de Moelle (U.F.G.M.) – Centre Hayem – Hopital Saint-Louis – 2 place du Dr A. Fournier – 75475 Paris Cedex 10 France, follow by Department of Paediatrics and Microbiology of the Centre Hospitalier de Kigali Rwanda, Departments of Medicine, Divisions of Infectious

Diseases, The Medical College of Pennsylvania and The Philadelphia V.A. Hospital Philadelphia, Pennsylvania 19129 and Laboratory of Haematology and Lymphology, Norsk Hydro's Institute for Cancer Research, the Norwegian Radium Hospital Montebello, Oslo, Norway is come second position 5(2.50%) followed by Department of Urology, University Hospital S-221 85 Lund, Sweden, Medical Research Council Tuberculosis and Chest Diseases Unit, Brompton Hospital Fulham Road, London SW3 6HP, England and Merck Sharp & Dohme Hertford Road, Hoddesdon, England is at third position 4 (2%) respectively.

4.9.2 Country Wise Collaboration Pattern

From the 40 collaboration articles, country wise collaboration was adopted. Figure No. 4.9.2 shows the same as follows.

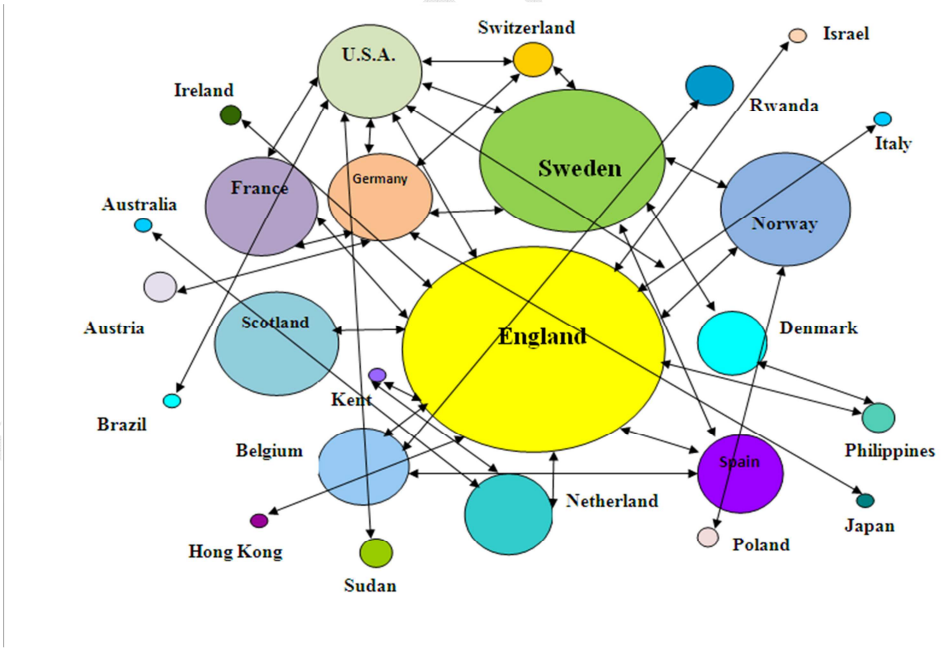

Figure No. 4.9.2: Collaborative Pattern between the countries

It can be seen from the above figure no.4.9.2 of articles with collaborations among different countries were 40 and 1431 articles were published by authors having collaboration with fellow authors from same country. England is the top-most country with 40 articles having collaborations with different countries, and Sweden is on second number with 18 collaborations with different countries followed by Norway had 17 articles having collaboration among other countries. However it is prominently seen that no Indian author had contributed during the first decade i.e. 1975-1984 to the Journal of Antimicrobial Chemotherapy.

5. CONCLUSION:

The Conclusions are based on 2163 articles appended at the Journal of Antimicrobial Chemotherapy (1975-1984). The span of 10 years was taken into consideration that is from 1975 to 1984.

The frequency distribution of different forms of literature used by researchers in Journal of Antimicrobial Chemotherapy, heavily depend on 2163 articles are used.

The Year wise productivity of literature was measured by number of years which elapsed between the publications of an article. Maximum number of articles 400 (18.49%) are there in the year 1983 and least number of articles 76 (3.70%) came in the years 1976.

The authors were analysed to determine the percentage of single author, two authors and three authors, four authors, five authors' six authors and more than six authors. The maximum number of articles 2163 articles 589 (28.69%) are by single author, followed by 436(21.24%) article by joint authors, 433 (21.09%) articles have three authors, by four authors 290 (14.13%), by five Author 168 (8.18%),by Six authors 78 (3.80%) and by more than six authors 59(2.87%)

The top most cited author are "Richard Wise" scores the top position with 76 (1.18%) articles, second rank goes to 'Ian Philips with 54 (0.84%) publications, followed by "Ian Philips' with 33 (0.51%) publications respectively by publishing as a any position authors.

The top position goes to London with 525 (10.81%) articles; Second rank goes to Birmingham with 255 (5.2%) articles, followed by the third rank goes to New York with 134 (2.7%) articles respectively.

The most frequent keyword occurred during publication was 'Humans' 495 (3.71%), 'Microbial Sensitivity Tests' 352 (2.64%) and 'Anti-Bacterial Agents/pharmacology' appears 227 (1.70%)

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