

Bibliometric Analysis of Growth Rate and Core Journals in the Literature on Lung Cancer (2010-2015): A Study

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Abstract - This paper presents a bibliometric analysis of the Growth rate and core journals in the field of Lung Cancer covered in MEDLINE data which are covered in the Pubmed during the study period i.e. 2010 to 2015. It was found that 42.93% records were Journal Article. It is noticed that 64180 of the records on 'Lung Cancer' are covered in the MEDLINE database for a period of six years. It is found that the maximum number of records (14692) was published during the year 2015, followed by 14626 in 2014 and 13167 in 2013. RGR has been decreasing from 2011 (2.73) to 2015 (0.26). On the other hand, the Doubling Time (Dt) has shown an increasing trend. It is also found that 53 core journals grouped in zone 1 published 9211 articles accounting for one third of the total output. Similarly the second zone comprises of 291 journals and 2759 journals grouped in third zone. The research productivity of Lung Cancer confirms the implication of Bradford's Law of Scattering.

Keywords: Bibliometrics, Lung Cancer, Growth Rate and Core Journals.

I. INTRODUCTION

Bibliometrics is a branch in Library Science and a number of studies are being carried out for a quantitative study of the various aspects of literature of a given subject. Research in bibliometrics includes studies pertaining to scattering of articles over journals, growth of literature, obsolescence of documents, productivity and impact of research, distribution of scientific publications by country, by language, citation studies, and so on. In addition, many bibliometric studies of important fields have appeared during the last three decades. The aim of in this study is to identify the Growth rate and core journals in the field of Lung Cancer (2010-2015) in MEDLINE data which are covered in the Pubmed.

II. REVIEW OF LITERATURE

Scientific growth has involved not only increase in manpower but also finance¹. Wooster² has estimated the number of journals that existed in the world at any one time, whereas some estimate of the number of papers published annually at various time was done by Vickery³ and Martyn⁴. Gottschalk and Desmond⁵ have estimated the number of scientific and technical journals that existed in the world. Growth studies in scientific areas studied by Baker⁶ in chemistry, Conard⁷ in biology, May⁸ and Lamb⁹ in mathematics, Sengupta in microbiology¹⁰, physiology¹¹.

biochemistry¹², Ramesh Babu and Ramakrishnan in Hepatitis¹³, Krishnamoorthy, Ramakrishnan and Devi¹⁴ in Diabetes and Ramakrishnan and Thavamani¹⁵ in Hepatitis-C. Ramakrishnan J and Thavamani K. also studied on Indian Contributions to the Field of Leptospirosis.¹⁶

Bradford¹⁷ described a scattering pattern of journals in the area of applied geophysics and lubrication. There are plenty of studies conducted on Bradford's Law. Heine¹⁸ noticed the different ranking conventions which exists in the relationship between 'journal productivities' and 'journal ranking by productivity' of Bradford's distributions. Ravichandra Rao¹⁹ studied the applicability of what Bradford in his book on 'Documentation' derived, the law of scattering, based on algebraic explanation with the supposition that $n_1 = n_2 = n$. Feicheng and Rui²⁰ used the frequency rank analysis of Bradford's law in a research on mechanism and model of scattering distribution of scientific information. Bogaert, and other²¹ showed how Bradford curves, i.e. cumulative rank frequency function used in informetrics can describe the fragment size distribution of percolation models.

There are several of studies on mapping and Bradford law in health sciences²²⁻³³. Schloman studied mapping the literature of allied health³⁴. Kundra³⁵ studied the behaviour of Bradford's Law towards citation data on Indian Medical Journal. Ramesh Babu and Ramakrishnan³⁶ studied on Indian Contributions to the field of Hepatitis (1984-2003) and used Bradford law to identify the core journals. Patra and Prakash Chand³⁷ studied on HIV/AIDS research in India. Ramakrishnan J and Thavamani K³⁸ studied on core journal analysis of the Literature on Leptospirosis. They used Bradford's law of scattering to identify core journals.

III. LUNG CANCER

According to Wikipedia "the Lung Cancer also known as lung carcinoma, it is a malignant lung tumor characterized by uncontrolled cell growth in tissues of the lung. If left untreated, this growth can spread beyond the lung by the process of metastasis into nearby tissue or other parts of the body. Most cancers that start in the lung, known as primary lung cancers, are carcinomas. The two main types are small-cell lung carcinoma (SCLC) and non-small-cell lung

carcinoma (NSCLC). The most common symptoms are coughing (including coughing up blood), weight loss, shortness of breath, and chest pains. The diagnosis is confirmed by biopsy which is usually performed by bronchoscopy or CT-guidance. Prevention is by avoiding risk factors including smoking and air pollution. Worldwide in 2012, lung cancer occurred in 1.8 million people and resulted in 1.6 million deaths”.³⁹

IV. OBJECTIVES OF THE STUDY

The Objectives of this study are,

1. To study the growth of literature in the field of Lung Cancer.
2. To identify the core journals in the field of Lung Cancer.

V. METHODOLOGY

The records published during the year 2010 to 2015 in the field of Lung Cancer in the MEDLINE data which are covered in the Pubmed (www.pubmed.com) “which is a free resource that is developed and maintained by the National Center for Biotechnology Information (NCBI), at the U.S. National Library of Medicine (NLM), located at the National Institutes of Health (NIH) was searched and bibliographic details like author, title, publication type, language, year; address of the contributors, country of publications, source etc. were collected. The retrieved records were converted into FoxPro and loaded in SPSS for the purpose of analysis”. The keyword ‘Lung Cancer’ has been used for extracting the number of records available in the above said database and the data thus collected on the

literary production of ‘Lung Cancer’ for the period 2010-2015 has been used for this study. In order to determine the growth rate, the bibliometric techniques like Relative Growth Rate (RGR)^{40&41} and Doubling time (Dt)⁴² have been used. Bradford Law⁴³ used to bring the core journals in field of Lung Cancer.

VI. LIMITATIONS

This study is limited to a period from 2010 to 2015 using MEDLINE data which covered in Pubmed only.

VII. ANALYSIS AND INTERPRETATION OF DATA

Data collected from the source database namely MEDLINE on the literary production of ‘Lung Cancer’ for the period 2010-2015 has been analysed by using various bibliometric techniques as described.

A. Quantum of Lung Cancer Research Productivity

The research productivity on ‘Lung Cancer’ covered in the database is shown in Table 1. It is noticed that 64180 of the records on ‘Lung Cancer’ are covered in the MEDLINE database for a period of six years from 2010 to 2015. The year-wise distribution of literature on ‘Lung Cancer’ according to source database MEDLINE is shown in Table 1. It is found that the maximum number of records (14692) was published during 2015, followed by 14626 in 2014 and 13167 in 2013. On the whole, it is noticed that from 2010 onwards there is a gradual increase of Lung Cancer research productivity every year which clearly shows in the Figure-1.

TABLE 1 LITERATURE PUBLISHED IN LUNG CANCER BY YEAR WISE

S.No.	Year	Frequency	%	Cumulative %
01	2010	642	1.00	1
02	2011	9190	14.32	15.32
03	2012	11863	18.48	33.8
04	2013	13167	20.52	54.32
05	2014	14626	22.79	77.11
06	2015	14692	22.89	100.00
	Total	64180	100.00	

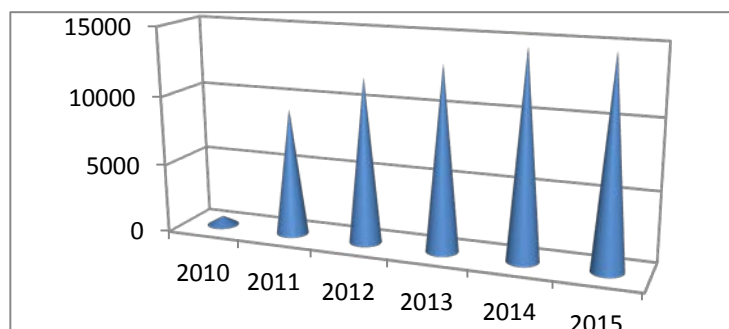


Fig.1 Year-wise Literature published in Lung Cancer

B. Publication types Distribution of Lung Cancer Research

Table 2 reveals the distribution of the 'Lung Cancer' research output according to various publication types of MEDLINE. It was found that the records in Journal Article (27554), Research Support, Non-U.S. Gov't (23170), Review (6609), Research Support, N.I.H., Extramural (2443), Letter (1752), Editorial (643), Multicenter Study (314), Randomized Controlled Trial (286), Meta-Analysis

(281), Validation Studies (264) News (234), Video-Audio Media (111), Observational Study (89), Practice Guideline (71), Introductory Journal Article (68), English Abstract (47), Published Erratum (47), Retract ion of Publication (46), Congresses (40), Personal Narratives (16), Portraits (15), Book (12), Patient Education Handout (9), Technical Report (8), Historical Article (6), Interview (6), Book Chapter (4), Lecture (4), Bibliography (3), Case Reports (3), Webcasts (3), Twin Study (2) and Others (20).

TABLE 2 PUBLICATION TYPE

S.No.	Publication Type	Total	%
1.	Journal Article	27554	42.93
2.	Research Support, Non-U.S. Gov't	23170	36.10
3.	Review	6609	10.30
4.	Research Support, N.I.H., Extramural	2443	3.81
5.	Letter	1752	2.73
6.	Editorial	643	1.00
7.	Multicenter Study	314	0.49
8.	Randomized Controlled Trial	286	0.45
9.	Meta-Analysis	281	0.44
10.	Validation Studies	264	0.41
11.	News	234	0.36
12.	Video-Audio Media	111	0.17
13.	Observational Study	89	0.14
14.	Practice Guideline	71	0.11
15.	Introductory Journal Article	68	0.11
16.	English Abstract	47	0.07
17.	Published Erratum	47	0.07
18.	Retract ion of Publication	46	0.07
19.	Congresses	40	0.06
20.	Personal Narratives	16	0.02
21.	Portraits	15	0.02
22.	Book	12	0.02
23.	Patient Education Handout	9	0.01
24.	Technical Report	8	0.01
25.	Historical Article	6	0.01
26.	Interview	6	0.01
27.	Book Chapter	4	0.01
28.	Lecture	4	0.01
29.	Bibliography	3	0.00
30.	Case Reports	3	0.00
31.	Webcasts	3	0.00
32.	Twin Study	2	0.00
33.	Others	20	0.03
	Total	64180	100.00

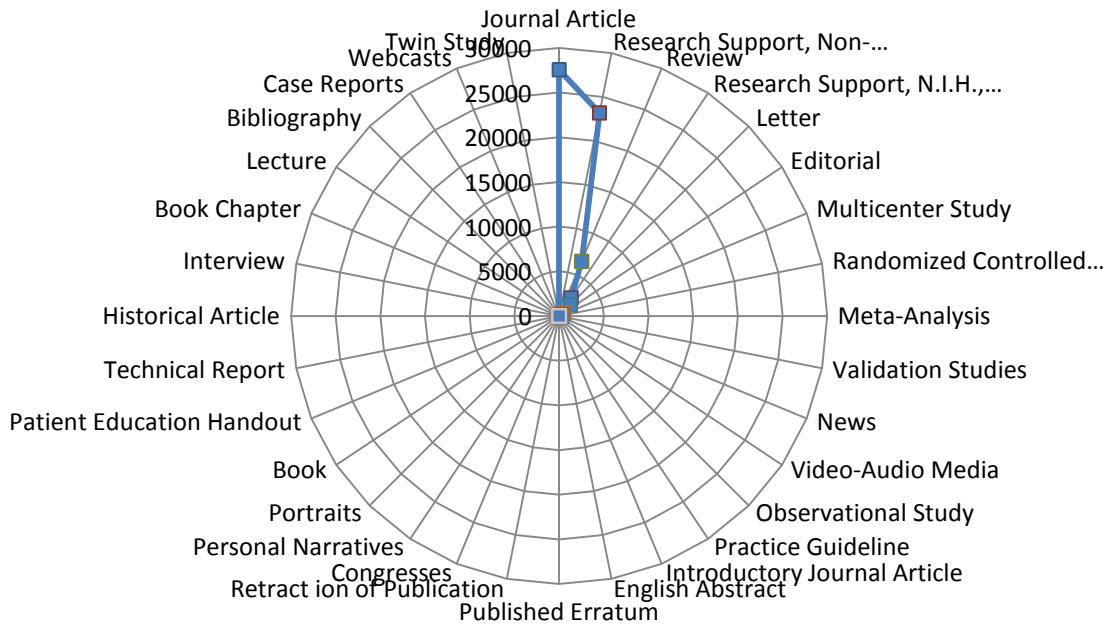


Fig.2 Publication Type in Lung Cancer

C. Relative Growth Rate (RGR) and Doubling Time (DT)

The analysis of data on the literary output in Lung Cancer has been done with parameters such as Relative Growth Rate (RGR) and Doubling Time (Dt). It is seen from Table

3 and Fig. 3 that RGR has been decreasing from 2011 (2.73) to 2015 (0.26). On the other hand, the Doubling Time (Dt) has shown an increasing trend. The data in Table 3 reveals that Doubling time has increased from 0.25 in the year 2011 to 2.67 in the year 2015 (Figure 2).

TABLE 3 RGR AND DT FOR LUNG CANCER RESEARCH OUTPUT BY YEAR-WISE

Sl. No.	Year	Quantum of Output	Cumulative Total of Output	W ₁	W ₂	RGR	Dt(a)
1	2010	642	642		6.46		
2	2011	9190	9832	6.46	9.19	2.73	0.25
3	2012	11863	21695	9.19	9.98	0.79	0.87
4	2013	13167	34862	9.98	10.46	0.48	1.45
5	2014	14626	49488	10.46	10.81	0.35	1.98
6	2015	14692	64180	10.81	11.07	0.26	2.67

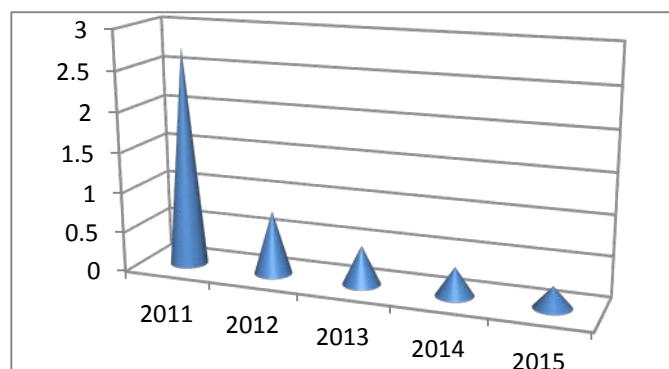


Fig.3 Relative Growth Rate for Research Output in Lung Cancer

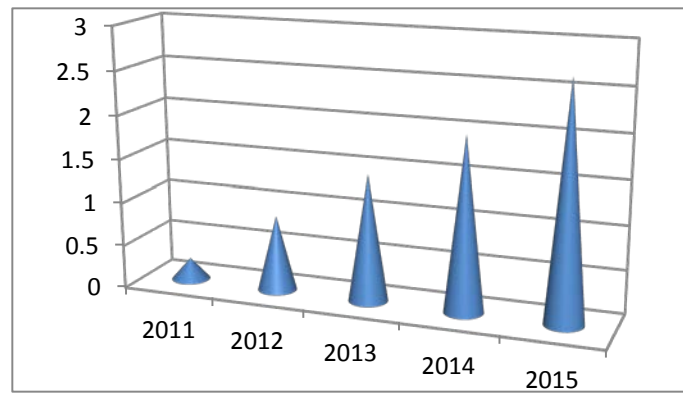


Fig.4 Doubling time for Research output in Lung Cancer

D. Distribution of Journals in Lung Cancer Based on Bradford Law of Scattering

As per the Bradford Law, the journals are grouped into three zones producing similar number of articles. The distribution of journal by zone wise is given in the Table 4. It is seen from Table 4 that 53 core journals grouped in zone 1 published 9211 articles accounting for one third of the

total output. Similarly the second zone comprises of 291 journals and 2759 journals grouped in third zone. The Bradford’s Law states that the number of periodicals in zones, the first zone and second zone will be 1: n: n²..... Accordingly the relationship is the zone will be 53: 291: 2759. On comparison with the data in Table 4, it is clear that the trend of research publication confirms the implication of Bradford’s Law (Figure 5).

TABLE- 4 DISTRIBUTION BY ZONE OF CITED JOURNALS AND REFERENCES IN LUNG CANCER

S.No.	Zone	No. of Journals		No. of Papers	
		No.	(%)	No.	(%)
01.	Zone 1	53	1.71	9211	33.43
02.	Zone 2	291	9.38	9321	33.83
03.	Zone 3	2759	88.91	9022	32.74
Total		3103	100.00	27554	100.00

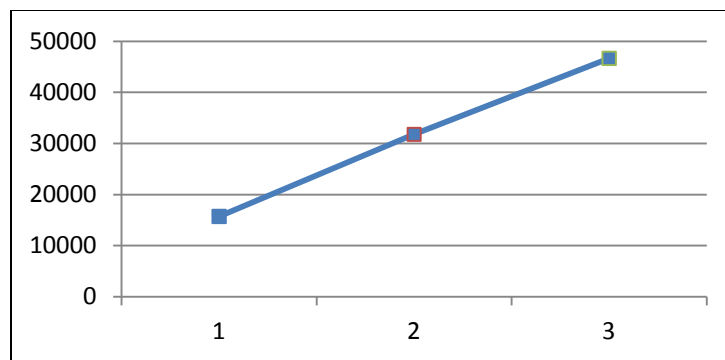


Fig.5 Distributions of Journals by Zones

E. Ranking of Journals in Lung Cancer Research

Ranking of the journals based on the research output on ‘Lung Cancer’ for the year 2010-2015 is given Table 5. The highly productive journals up to five ranks are as follows.

1. ‘The Annals of thoracic surgery’ with 519 contributions amounting to 1.88% of total contributions.
2. ‘Journal of thoracic oncology’ published with 434 contributions amounting to 1.58%.
3. ‘Gan to kagaku ryoho. Cancer & chemotherapy’ with 423 contributions amounting to 1.54%.
4. ‘Lung cancer (Amsterdam, Netherlands)’ with 413 contributions amounting to 1.50%.
5. ‘Oncology letters’ with 386 contributions amounting to 1.40%.

TABLE 5 RANKING OF JOURNALS IN LUNG CANCER RESEARCH

S.No.	Name of the Journal	No. of Records	%	Cumulative records
1.	The Annals of thoracic surgery	519	1.88	519
2.	Journal of thoracic oncology	434	1.58	953
3.	Gan to kagaku ryoho. Cancer & chemotherapy	423	1.54	1376
4.	Lung cancer (Amsterdam, Netherlands)	413	1.50	1789
5.	Oncology letters	386	1.40	2175
6.	Asian Pacific journal of cancer prevention : APJCP	346	1.26	2521
7.	Journal of thoracic disease	292	1.06	2813
8.	Tumour biology : the journal of the International Society for Oncodevelopmental	272	0.99	3085
9.	European journal of cardio-thoracic surgery : official journal of the European	268	0.97	3353
10.	Kyobu geka. The Japanese journal of thoracic surgery	247	0.90	3600
11.	PloS one	245	0.89	3845
12.	BMJ case reports	237	0.86	4082
13.	Zhongguo fei ai za zhi = Chinese journal of lung cancer	229	0.83	4311
14.	Anticancer research	228	0.83	4539
15.	Oncotarget	213	0.77	4752
16.	Interactive cardiovascular and thoracic surgery	202	0.73	4954
17.	International journal of radiation oncology, biology, physics	199	0.72	5153
18.	Translational lung cancer research	171	0.62	5324
19.	Clinical lung cancer	161	0.58	5485
20.	Annals of thoracic and cardiovascular surgery	148	0.54	5633
21.	The Journal of thoracic and cardiovascular surgery	144	0.52	5777
22.	Clinical nuclear medicine	141	0.51	5918
23.	OncoTargets and therapy	138	0.50	6056
24.	Zhonghua zhong liu za zhi [Chinese journal of oncology]	131	0.48	6187
25.	Medical oncology (Northwood, London, England)	129	0.47	6316
26.	Oncology reports	127	0.46	6443
27.	Internal medicine (Tokyo, Japan)	125	0.45	6568
28.	Radiation oncology (London, England)	124	0.45	6692
29.	International journal of clinical and experimental pathology	120	0.44	6812
30.	World journal of surgical oncology	119	0.43	6931
31.	BMC cancer	118	0.43	7049
32.	International journal of clinical and experimental medicine	118	0.43	7167
33.	Tumori	117	0.42	7284
34.	Radiotherapy and oncology : journal of the European Society for Therapeutic	116	0.42	7400
35.	Experimental and therapeutic medicine	112	0.41	7512
36.	Surgery today	112	0.41	7624
37.	Chest	111	0.40	7735
38.	General thoracic and cardiovascular surgery	110	0.40	7845
39.	Medical physics	106	0.38	7951
40.	Asian cardiovascular & thoracic annals	102	0.37	8053
41.	Journal of clinical oncology : official journal of the American Society of	102	0.37	8155

S.No.	Name of the Journal	No. of Records	%	Cumulative records
42.	Journal of cancer research and therapeutics	98	0.36	8253
43.	Molecular medicine reports	98	0.36	8351
44.	Molecular and clinical oncology	97	0.35	8448
45.	Clinical cancer research : an official journal of the American Association for	92	0.33	8540
46.	Japanese journal of clinical oncology	90	0.33	8630
47.	Annals of surgical oncology	89	0.32	8719
48.	Journal of bronchology & interventional pulmonology	83	0.30	8802
49.	Thoracic cancer	83	0.30	8885
50.	Cancer	82	0.30	8967
51.	The Thoracic and cardiovascular surgeon	82	0.30	9049
52.	Cancer research and treatment : official journal of Korean Cancer Association	81	0.29	9130
53.	Case reports in oncology	81	0.29	9211
54.	Revue des maladies respiratoires	79	0.29	9290
55.	Diagnostic cytopathology	77	0.28	9367
56.	Current oncology (Toronto, Ont.)	72	0.26	9439
57.	Journal of cancer research and clinical oncology	72	0.26	9511
58.	Clinical & translational oncology	71	0.26	9582
59.	Journal of medical case reports	71	0.26	9653
60.	Oncoimmunology	68	0.25	9721
61.	Cancer chemotherapy and pharmacology	66	0.24	9787
62.	Frontiers in oncology	66	0.24	9853
63.	International journal of oncology	66	0.24	9919
64.	Supportive care in cancer	66	0.24	9985
65.	Zhonghua bing li xue za zhi Chinese journal of pathology	66	0.24	10051
66.	American journal of clinical oncology	65	0.24	10116
67.	British journal of cancer	65	0.24	10181
68.	Journal of cardiothoracic surgery	65	0.24	10246
69.	Chinese journal of cancer research = Chung-kuo yen cheng yen chiu	64	0.23	10310
70.	Oncology (Williston Park, N.Y.)	64	0.23	10374
71.	The British journal of radiology	62	0.23	10436
72.	Zhonghua yi xue za zhi	62	0.23	10498
73.	Oncogene	59	0.21	10557
74.	Practical radiation oncology	59	0.21	10616
75.	Strahlentherapie und Onkologie	59	0.21	10675
76.	Journal of applied clinical medical physics / American College of Medical Physics	58	0.21	10733
77.	American journal of cancer research	57	0.21	10790
78.	American journal of respiratory and critical care medicine	57	0.21	10847
79.	Cancer cell international	57	0.21	10904
80.	The clinical respiratory journal	57	0.21	10961
81.	Archivos de bronconeumologia	56	0.20	11017
82.	Chinese medical journal	56	0.20	11073
83.	Acta oncologica (Stockholm, Sweden)	55	0.20	11128

S.No.	Name of the Journal	No. of Records	%	Cumulative records
84.	European review for medical and pharmacological sciences	55	0.20	11183
85.	Human pathology	55	0.20	11238
86.	International journal of cancer. Journal international du cancer	55	0.20	11293
87.	Scientific reports	55	0.20	11348
88.	European journal of radiology	54	0.20	11402
89.	Journal of B.U.ON. : official journal of the Balkan Union of Oncology	54	0.20	11456
90.	Archives of pathology & laboratory medicine	53	0.19	11509
91.	Future oncology (London, England)	53	0.19	11562
92.	Medicine	53	0.19	11615
93.	The Lancet. Oncology	53	0.19	11668
94.	Journal of nuclear medicine : official publication, Society of Nuclear Medicine	52	0.19	11720
95.	Lung India : official organ of Indian Chest Society	52	0.19	11772
96.	Nihon Kokyuki Gakkai zasshi = the journal of the Japanese Respiratory Society	52	0.19	11824
97.	Pneumonologia i alergologia polska	52	0.19	11876
98.	Radiology	51	0.19	11927
99.	Technology in cancer research & treatment	51	0.19	11978
100.	The oncologist	51	0.19	12029
101.	Tuberculosis and respiratory diseases	51	0.19	12080
102.	Voprosy onkologii	51	0.19	12131
103.	AJR. American journal of roentgenology	50	0.18	12181
104.	Lung	50	0.18	12231
105.	Revue de pneumologie clinique	50	0.18	12281
106.	Evidence-based complementary and alternative medicine : eCAM	49	0.18	12330
107.	The American journal of surgical pathology	49	0.18	12379
108.	Annals of oncology	48	0.17	12427
109.	Cancer discovery	48	0.17	12475
110.	Cancers	48	0.17	12523
111.	Thorax	48	0.17	12571
112.	International journal of clinical oncology	47	0.17	12618
113.	Respiration; international review of thoracic diseases	46	0.17	12664
114.	Clinical imaging	45	0.16	12709
115.	Genetics and molecular research : GMR	45	0.16	12754
116.	Virchows Archiv : an international journal of pathology	45	0.16	12799
117.	Diagnostic pathology	44	0.16	12843
118.	The European respiratory journal	44	0.16	12887
119.	Journal of Cancer	43	0.16	12930
120.	Medical dosimetry : official journal of the American Association of Medical	43	0.16	12973
121.	European journal of nuclear medicine and molecular imaging	42	0.15	13015
122.	European radiology	42	0.15	13057
123.	International journal of surgery case reports	42	0.15	13099
124.	Journal of thoracic imaging	42	0.15	13141
125.	Molecular cancer therapeutics	42	0.15	13183

S.No.	Name of the Journal	No. of Records	%	Cumulative records
126.	Asia-Pacific journal of clinical oncology	41	0.15	13224
127.	Cancer cytopathology	41	0.15	13265
128.	Physics in medicine and biology	41	0.15	13306
129.	Pneumologie (Stuttgart, Germany)	41	0.15	13347
130.	Respirology (Carlton, Vic.)	41	0.15	13388
131.	The Korean journal of thoracic and cardiovascular surgery	41	0.15	13429
132.	Acta radiologica (Stockholm, Sweden : 1987)	40	0.15	13469
133.	Biochemical and biophysical research communications	40	0.15	13509
134.	Cancer research	40	0.15	13549
135.	Hinyokika kiyo. Acta urologica Japonica	40	0.15	13589
136.	QJM : monthly journal of the Association of Physicians	40	0.15	13629
137.	Value in health : the journal of the International Society for Pharmacoeconomics	40	0.15	13669
138.	Applied immunohistochemistry & molecular morphology : AIMM / official publication	39	0.14	13708
139.	BMJ open	39	0.14	13747
140.	Case reports in oncological medicine	39	0.14	13786
141.	Journal of medical imaging and radiation oncology	39	0.14	13825
142.	Journal of surgical oncology	39	0.14	13864
143.	Neoplasma	39	0.14	13903
144.	World journal of surgery	39	0.14	13942
145.	Cancer science	38	0.14	13980
146.	Journal of vascular and interventional radiology : JVIR	38	0.14	14018
147.	Nature reviews. Clinical oncology	38	0.14	14056
148.	Nuclear medicine communications	38	0.14	14094
149.	Academic radiology	37	0.13	14131
150.	BioMed research international	37	0.13	14168
151.	Cancer epidemiology	37	0.13	14205
152.	Deutsche medizinische Wochenschrift (1946)	37	0.13	14242
153.	Journal of oncology practice / American Society of Clinical Oncology	37	0.13	14279
154.	Cancer biology & therapy	36	0.13	14315
155.	Masui. The Japanese journal of anesthesiology	36	0.13	14351
156.	Onkologie	36	0.13	14387
157.	Annals of translational medicine	35	0.13	14422
158.	Heart, lung & circulation	35	0.13	14457
159.	Molecular carcinogenesis	35	0.13	14492
160.	Cancer radiotherapie : journal de la Societe francaise de radiotherapie	34	0.12	14526
161.	Contemporary oncology (Poznan, Poland)	34	0.12	14560
162.	European journal of cancer (Oxford, England : 1990)	34	0.12	14594
163.	Revista espanola de medicina nuclear e imagen molecular	34	0.12	14628
164.	BMC research notes	33	0.12	14661
165.	Genes & cancer	33	0.12	14694
166.	Japanese journal of radiology	33	0.12	14727
167.	Journal of pediatric hematology/oncology	33	0.12	14760

S.No.	Name of the Journal	No. of Records	%	Cumulative records
168.	Pathology, research and practice	33	0.12	14793
169.	Therapeutic advances in medical oncology	33	0.12	14826
170.	Cardiovascular and interventional radiology	32	0.12	14858
171.	Journal of the National Comprehensive Cancer Network : JNCCN	32	0.12	14890
172.	Pathology international	32	0.12	14922
173.	Pathology oncology research : POR	32	0.12	14954
174.	Annals of nuclear medicine	31	0.11	14985
175.	Biomedicine & pharmacotherapy = Biomedecine & pharmacotherapie	31	0.11	15016
176.	Cancer letters	31	0.11	15047
177.	Indian journal of cancer	31	0.11	15078
178.	Journal of radiation research	31	0.11	15109
179.	La Radiologia medica	31	0.11	15140
180.	Zhonghua jie he he hu xi za zhi = Zhonghua jiehe he huxi zazhi = Chinese journal	31	0.11	15171
181.	American journal of clinical pathology	30	0.11	15201
182.	Anti-cancer drugs	30	0.11	15231
183.	Nederlands tijdschrift voor geneeskunde	30	0.11	15261
184.	The Journal of surgical research	30	0.11	15291
185.	The New England journal of medicine	30	0.11	15321
186.	Bulletin du cancer	29	0.11	15350
187.	European journal of medicinal chemistry	29	0.11	15379
188.	Histopathology	29	0.11	15408
189.	Jornal brasileiro de pneumologia : publicacao oficial da Sociedade Brasileira de	29	0.11	15437
190.	Oncology	29	0.11	15466
191.	Translational oncology	29	0.11	15495
192.	Annals of the American Thoracic Society	28	0.10	15523
193.	Journal of clinical pathology	28	0.10	15551
194.	Journal of palliative medicine	28	0.10	15579
195.	Respiratory care	28	0.10	15607
196.	Cellular physiology and biochemistry : international journal of experimental	27	0.10	15634
197.	Clinical oncology (Royal College of Radiologists (Great Britain))	27	0.10	15661
198.	Clinical & experimental metastasis	26	0.09	15687
199.	Expert review of anticancer therapy	26	0.09	15713
200.	Journal of neuro-oncology	26	0.09	15739
201.	Respiratory medicine	26	0.09	15765
202.	SpringerPlus	26	0.09	15791
203.	Tuberkuloz ve toraks	26	0.09	15817
204.	Chinese journal of cancer	25	0.09	15842
205.	Ecancermedicalscience	25	0.09	15867
206.	European journal of surgical oncology : the journal of the European Society of	25	0.09	15892
207.	International journal of molecular sciences	25	0.09	15917
208.	Korean journal of radiology	25	0.09	15942

S.No.	Name of the Journal	No. of Records	%	Cumulative records
209.	Nihon Geka Gakkai zasshi	25	0.09	15967
210.	Pediatric blood & cancer	25	0.09	15992
211.	Respiratory medicine case reports	25	0.09	16017
212.	Revista portuguesa de pneumologia	25	0.09	16042
213.	Seminars in thoracic and cardiovascular surgery	25	0.09	16067
214.	The Pan African medical journal	25	0.09	16092
215.	Thyroid : official journal of the American Thyroid Association	25	0.09	16117
216.	Cancer imaging : the official publication of the International Cancer Imaging	24	0.09	16141
217.	Cell biochemistry and biophysics	24	0.09	16165
218.	Journal of pediatric surgery	24	0.09	16189
219.	Klinicka onkologie : casopis Ceske a Slovenske onkologicke spolocnosti	24	0.09	16213
220.	Radiation protection dosimetry	24	0.09	16237
221.	The International journal of biological markers	24	0.09	16261
222.	Xi bao yu fen zi mian yi xue za zhi = Chinese journal of cellular and molecular	24	0.09	16285
223.	Cancer biomarkers : section A of Disease markers	23	0.08	16308
224.	Lancet (London, England)	23	0.08	16331
225.	Nihon Shokakibyō Gakkai zasshi = The Japanese journal of gastro-enterology	23	0.08	16354
226.	Radiation oncology journal	23	0.08	16377
227.	RoFo : Fortschritte auf dem Gebiete der Rontgenstrahlen und der Nuklearmedizin	23	0.08	16400
228.	Sichuan da xue xue bao. Yi xue ban = Journal of Sichuan University. Medical	23	0.08	16423
229.	The American journal of case reports	23	0.08	16446
230.	The American journal of hospice & palliative care	23	0.08	16469
231.	Advances in experimental medicine and biology	22	0.08	16491
232.	Annals of thoracic medicine	22	0.08	16513
233.	Biomedical reports	22	0.08	16535
234.	Chemotherapy	22	0.08	16557
235.	Clinical advances in hematology & oncology : H&O	22	0.08	16579
236.	Clinical radiology	22	0.08	16601
237.	Indian journal of nuclear medicine : IJNM : the official journal of the Society	22	0.08	16623
238.	International journal of surgical pathology	22	0.08	16645
239.	Journal of neurosurgery	22	0.08	16667
240.	Khirurgiia	22	0.08	16689
241.	Modern pathology : an official journal of the United States and Canadian Academy	22	0.08	16711
242.	Nihon rinsho. Japanese journal of clinical medicine	22	0.08	16733
243.	Revue medicale suisse	22	0.08	16755
244.	South Asian journal of cancer	22	0.08	16777
245.	The American surgeon	22	0.08	16799
246.	Biochimica et biophysica acta	21	0.08	16820
247.	Cancer management and research	21	0.08	16841
248.	Case reports in medicine	21	0.08	16862
249.	Journal of Korean medical science	21	0.08	16883

S.No.	Name of the Journal	No. of Records	%	Cumulative records
250.	Medicina clinica	21	0.08	16904
251.	Methods in molecular biology (Clifton, N.J.)	21	0.08	16925
252.	Oncogenesis	21	0.08	16946
253.	Physica medica : PM : an international journal devoted to the applications of	21	0.08	16967
254.	Psycho-oncology	21	0.08	16988
255.	Respiratory investigation	21	0.08	17009
256.	Turk patoloji dergisi	21	0.08	17030
257.	World journal of gastroenterology	21	0.08	17051
258.	ACS medicinal chemistry letters	20	0.07	17071
259.	Asian Pacific journal of tropical medicine	20	0.07	17091
260.	Bioorganic & medicinal chemistry	20	0.07	17111
261.	Hepato-gastroenterology	20	0.07	17131
262.	Indian journal of pathology & microbiology	20	0.07	17151
263.	Reports of practical oncology and radiotherapy : journal of Greatpoland Cancer	20	0.07	17171
264.	The Indian journal of chest diseases & allied sciences	20	0.07	17191
265.	Transplantation proceedings	20	0.07	17211
266.	American journal of translational research	19	0.07	17230
267.	Annals of palliative medicine	19	0.07	17249
268.	EJNMMI research	19	0.07	17268
269.	Genome medicine	19	0.07	17287
270.	Giornale italiano di medicina del lavoro ed ergonomia	19	0.07	17306
271.	Investigational new drugs	19	0.07	17325
272.	Journal of computer assisted tomography	19	0.07	17344
273.	Journal of the Medical Association of Thailand = Chotmai het thangphaet	19	0.07	17363
274.	Magyar onkologia	19	0.07	17382
275.	Nuclear medicine and molecular imaging	19	0.07	17401
276.	Surgical endoscopy	19	0.07	17420
277.	Acta cytologica	18	0.07	17438
278.	Bioorganic & medicinal chemistry letters	18	0.07	17456
279.	BMJ (Clinical research ed.)	18	0.07	17474
280.	Cancer cell	18	0.07	17492
281.	Cancer epidemiology, biomarkers & prevention : a publication of the American	18	0.07	17510
282.	Cancer prevention research (Philadelphia, Pa.)	18	0.07	17528
283.	Clinical Medicine Insights. Oncology	18	0.07	17546
284.	Clinical neurology and neurosurgery	18	0.07	17564
285.	Der Radiologe	18	0.07	17582
286.	Journal of experimental & clinical cancer research : CR	18	0.07	17600
287.	Journal of translational medicine	18	0.07	17618
288.	Multidisciplinary respiratory medicine	18	0.07	17636
289.	Nan fang yi ke da xue xue bao = Journal of Southern Medical University	18	0.07	17654
290.	Ugeskrift for laeger	18	0.07	17672
291.	American Society of Clinical Oncology educational book /	17	0.06	17689

S.No.	Name of the Journal	No. of Records	%	Cumulative records
	ASCO. American Society			
292.	Annales de pathologie	17	0.06	17706
293.	Annals of cardiothoracic surgery	17	0.06	17723
294.	Annals of surgery	17	0.06	17740
295.	BMC public health	17	0.06	17757
296.	Cancer informatics	17	0.06	17774
297.	Cancer investigation	17	0.06	17791
298.	Cancer medicine	17	0.06	17808
299.	Chirurgia (Bucharest, Romania : 1990)	17	0.06	17825
300.	Innovations (Philadelphia, Pa.)	17	0.06	17842
301.	Journal of cellular biochemistry	17	0.06	17859
302.	Journal of clinical neuroscience : official journal of the Neurosurgical Society	17	0.06	17876
303.	Journal of oncology	17	0.06	17893
304.	Journal of the American College of Radiology : JACR	17	0.06	17910
305.	Lung cancer international	17	0.06	17927
306.	Minerva chirurgica	17	0.06	17944
307.	Molecules (Basel, Switzerland)	17	0.06	17961
308.	Zentralblatt fur Chirurgie	17	0.06	17978
309.	Cancer biology & medicine	16	0.06	17994
310.	Cancer biotherapy & radiopharmaceuticals	16	0.06	18010
311.	Conference proceedings: ... Annual International Conference of the IEEE	16	0.06	18026
312.	European journal of cancer prevention : the official journal of the European	16	0.06	18042
313.	Experimental oncology	16	0.06	18058
314.	Journal of the Indian Medical Association	16	0.06	18074
315.	La Revue du praticien	16	0.06	18090
316.	Medical image computing and computer-assisted intervention : MICCAI ...	16	0.06	18106
317.	Molecular biology reports	16	0.06	18122
318.	Nihon Hoshasen Gijutsu Gakkai zasshi	16	0.06	18138
319.	Rare tumors	16	0.06	18154
320.	Rozhledy v chirurgii : mesicnik Ceskoslovenske chirurgicke spolecnosti	16	0.06	18170
321.	Targeted oncology	16	0.06	18186
322.	The Journal of clinical endocrinology and metabolism	16	0.06	18202
323.	Acta chirurgica Belgica	15	0.05	18217
324.	Anti-cancer agents in medicinal chemistry	15	0.05	18232
325.	Cancer immunology, immunotherapy : CII	15	0.05	18247
326.	Der Internist	15	0.05	18262
327.	Drug delivery	15	0.05	18277
328.	Drug design, development and therapy	15	0.05	18292
329.	EBioMedicine	15	0.05	18307
330.	European journal of gynaecological oncology	15	0.05	18322
331.	International immunopharmacology	15	0.05	18337
332.	International journal of molecular medicine	15	0.05	18352

S.No.	Name of the Journal	No. of Records	%	Cumulative records
333.	Journal of pain and symptom management	15	0.05	18367
334.	La Tunisie medicale	15	0.05	18382
335.	Molecular and cellular biochemistry	15	0.05	18397
336.	Oncology nursing forum	15	0.05	18412
337.	Proceedings of the National Academy of Sciences of the United States of America	15	0.05	18427
338.	Respirology case reports	15	0.05	18442
339.	Sarcoidosis, vasculitis, and diffuse lung diseases : official journal of WASOG /	15	0.05	18457
340.	Statistics in medicine	15	0.05	18472
341.	Vestnik khirurgii imeni I. I. Grekova	15	0.05	18487
342.	World journal of clinical oncology	15	0.05	18502
343.	World neurosurgery	15	0.05	18517
344.	Zhongguo Zhong yao za zhi = Zhongguo zhongyao zazhi = China journal of Chinese	15	0.05	18532

VIII. CONCLUSION

In the field of medicine, the results show that Lung Cancer literature is growing year after year. It also shows that maximum number of records covered by journal articles in MEDLINE in the field of Lung Cancer. 344 core journals were identified with the help of zone-1 and zone-2 as per Bradford's Law. Further the research productivity of Lung Cancer confirms the implications of Bradford's Law of Scattering.

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