

Research Article**SCIENTOMETRIC ANALYSIS OF LUNG CANCER DISEASE RESEARCH OUTPUT IN EUROPEAN COUNTRIES****^{1,*} Dr. M. Abhirami, ²Dr. V. Gowri, ³Dr. A. Parthasarathy and ⁴Dr. K. Thangadurai**¹Sri Ramana Herbs, India²Maria Siddha Medical College and Hospital, India.³JSA Medical College for Siddha and Research Center, India.**Received 18th October 2024; Accepted 27th November 2024; Published online 31st December 2024**

Abstract

This paper discusses or analyses trends in lung cancer disease research during from 2020-2024 the data have been collected from web of science database. Aim of the study to analyze source wise research output, year wise publications, authorship pattern, and country wise research. The study finds that articles occupies first place among various forms of sources, during the study period in the year 2021 published highest research output, majority research papers published themes of lung cancer disease field.

Keywords: Alveoli, Biomarker, Biopsy, Bronchus, Capillaries, Cilia, Diaphragm, Hospice, Lobe, Lymph, Mucus.

INTRODUCTION

Lung cancer is a malignant disease marked by the uncontrolled growth of abnormal cells in the lung tissues, which can spread to other organs if left untreated, leading to high mortality. In 2020, it was responsible for 2.2 million new cases and 1.8 million deaths globally, making it the leading cause of cancer-related deaths worldwide. The global burden of lung cancer continues to grow, imposing significant physical, emotional, and economic challenges on patients, families, and healthcare systems. Risk factors for lung cancer include smoking, exposure to carcinogens such as radon and asbestos, environmental pollution, genetic predisposition, and lifestyle factors. Despite advancements in screening and treatment, the disease is often diagnosed at advanced stages, resulting in a poor prognosis and high disability-adjusted life years (DALYs). Although the incidence of lung cancer has decreased in some regions due to smoking cessation initiatives, it remains a critical health issue worldwide. Scientometric analysis, which employs mathematical and statistical tools to evaluate research trends, provides valuable insights into the scientific landscape of lung cancer research. This study focuses on analyzing literature from 2021 to 2023, identifying the most prolific countries and journals, influential authors, high-impact articles, and emerging research trends in this field.

Objectives

To major objectives are formulated in the present study as mentioned below:

- To examine for assess the lung cancer disease output during the study period.
- To keep under surveillance the country-wise research output of lung cancer disease research.
- To enquire the language-wise and institution-wise lung cancer disease research publications said.
- To identify the source-wise lung cancer disease research publications scrutinize.

- To think identify the relative growth rate.

METHODOLOGY

This study aims to analyze the trend in the growth of lung cancer disease research in scientometrics. The analysis also focused to trace the past trends in the research of lung cancer disease. The research publications in scientometrics based on the sample data. The study evaluates the contributions of countries to the growth pattern and development of research productivity in this discipline during the last few years.

Data collection

The publication of research output on lung cancer disease research in scientometrics study is obtained from various sources, such as Journals articles, Conference papers. Review, short survey, note, editorial press release and letter. The research data required for the present study are experts from the web of science database. All the publications were retrieved from the web of science database on lung cancer disease in a scientometrics study covering 2020 to 2024. Further, the researcher has downloaded the data in the form of notepad files; after that, the bibliographical details are converted in the form of MS-EXCEL format using the PHP (Hypertext Preprocessor) scripting language text unique data are rearranged in MS-EXCEL format to eliminate duplication from the download data. Over all data retrieved by the researcher in HistCite software are 14222 records for analyzing the present study.

Limitations

The findings of this study apply only to lung cancer disease studies in the fields related to Adenocarcinoma, Adjuvant therapy, Infection, and Large cell carcinoma disease. This study covers lung cancer disease with respect to the medical field, brought under the purview of the study and no other themes. This study makes special attention only to the performance of research output in lung cancer disease research. This study covers the years from 2020 to 2024 only.

ANALYSIS AND INTERPRETATION

Table 1. Year wise publication lung cancer disease research

S. No	Publication Year	Recs	Percent	TLCS	TGCS
1	2020	2699	19.0	4955	82821
2	2021	3096	21.8	3894	112884
3	2022	3011	21.2	1720	36050
4	2023	3053	21.5	1123	18441
5	2024	2363	16.6	131	4929

Note: TLCS: Total Local Citation Score, TGCS: Total Global Citation Score

The year-wise productivity of publications in lung cancer disease research output from the year 2020 to 2024 is presented in table-1. It shows that the publication of output is gradually increased and decreased trend. In 2021 occupied the first position that the output is increased (21.8%) compared to 2020 and 2024. It is clearly stated that in the future the research productivity in lung cancer disease research is increasing trend.

Table 2. Sources wise output in lung cancer disease research

S. No	Document Type	Recs	Percent	TLCS	TGCS
1	Article	8689	61.1	9388	188673
2	Meeting Abstract	2295	16.1	371	3621
3	Review	2176	15.3	1569	57022
4	Editorial Material	498	3.5	151	1672
5	Article; Early Access	197	1.4	0	472
6	Letter	188	1.3	106	579
7	Article; Proceedings Paper	51	0.4	211	1847
8	Correction	46	0.3	0	21
9	Review; Early Access	41	0.3	0	131
10	Article; Book Chapter	8	0.1	8	151

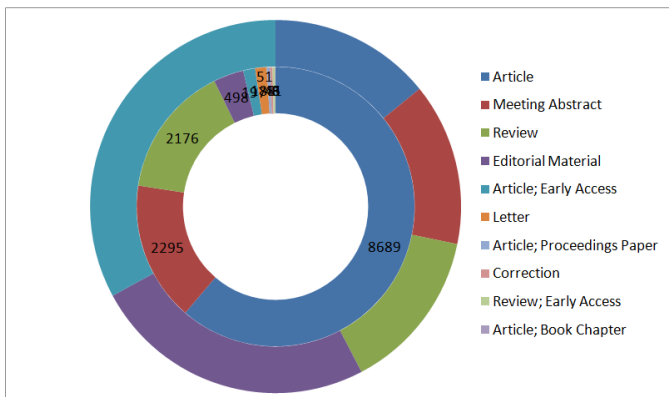


Fig. 1. Sources wise output in lung cancer disease research

The source wise output in level of lung cancer disease research is given in table-2. It shows that the Article is occupies first position (61.1%), second is Meeting Abstract (16.1%), Review (15.3%) Editorial Material (3.5%) followed by Article; Early Access, Letter, Article; Proceedings Paper, and etc.

Table 3. Top 10 authors in lung cancer disease research (Total 74568)

S. No	Author	Recs	Percent	TLCS	TGCS
1	Felip E	277	1.9	1487	11759
2	Besse B	242	1.7	693	5554
3	Reck M	239	1.7	1022	8344
4	Thomas M	193	1.4	317	2484
5	Paz-Ares L	188	1.3	652	6151
6	Girard N	185	1.3	416	4207
7	Peters S	168	1.2	993	8080
8	Barlesi F	167	1.2	763	6829
9	Planchard D	167	1.2	1074	8412
10	Provencio M	156	1.1	442	3838

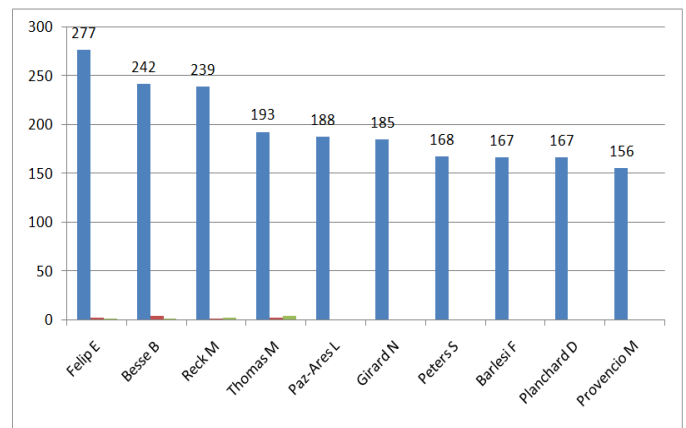


Fig. 2. Authors in lung cancer disease research

Table 3 shows that top 10 authors of lung cancer disease research. It could be noted that the Felip E occupied in first position (1.9%) compared to Besse B second position (1.7%) followed by Reck M and Provencio M occupied in last position (1.1%).

Table 4. Top 10 Journals in lung cancer disease research (1870)

S. No	Journal	Recs	Percent	TLCS	TGCS
1	Cancers	711	5.0	0	8312
2	Journal of Thoracic Oncology	690	4.8	1397	10875
3	Annals Of Oncology	528	3.7	939	7762
4	Journal of Clinical Oncology	476	3.3	1033	10880
5	International Journal of Molecular Sciences	280	2.0	0	4413
6	Lung Cancer	279	2.0	445	2809
7	Frontiers in Oncology	244	1.7	0	2353
8	Translational Lung Cancer Research	232	1.6	226	2018
9	European Respiratory Journal	181	1.3	0	510
10	Oncology Research and Treatment	165	1.2	4	66

The Journal wise output of lung cancer disease research is given in table-4. It could be noted that the Cancers Journal occupies in first position (5.0%) compared to Journal of Thoracic Oncology (4.8%); third is Annals of Oncology (3.7%) followed by others.

Table 5. Top ten Country wise of lung cancer disease research (142)

S. No	Country	Recs	Percent	TLCS	TGCS
1	Germany	4836	34.0	4949	80294
2	France	4051	28.5	6303	131402
3	Spain	3780	26.6	5447	74405
4	USA	3420	24.0	7420	145026
5	Switzerland	1934	13.6	2870	40742
6	UK	1658	11.7	3775	53375
7	Italy	1617	11.4	4404	53677
8	Peoples R China	1171	8.2	2681	34174
9	Netherlands	939	6.6	2203	28160
10	Russia	882	6.2	1350	18447

The country wise output in country level of lung cancer research is given in table-5. It could be noted that the Germany is occupies in first position (34.7%) compared to France (28.5%); Spain (26.68%) followed by USA and etc.

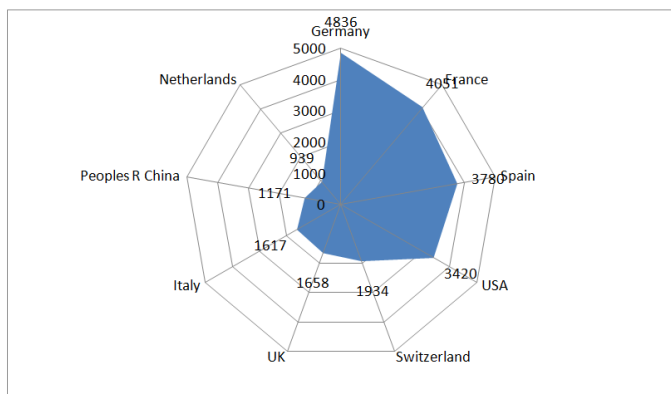


Fig. 3. Countries in lung cancer disease research

Table 6. Top ten Institutions wise of lung cancer disease research (200)

S. No	Institution	Recs	Percent	TLCS	TGCS
1	German Canc Res Ctr	444	3.1	442	7067
2	Mem Sloan Kettering Canc Ctr	408	2.9	1840	21131
3	Univ Paris Saclay	404	2.8	621	8944
4	Univ Texas MD Anderson Canc Ctr	348	2.4	1297	14607
5	German Ctr Lung Res DZL	336	2.4	450	4470
6	Gustave Roussy	327	2.3	985	9736
7	Heidelberg Univ	313	2.2	261	5437
8	Harvard Med Sch	299	2.1	718	10841
9	Ludwig Maximilians Univ Munchen	294	2.1	281	5129
10	Aix Marseille Univ	278	2.0	692	9011

The Institution wise output in lung cancer disease research is given in table-6. It could be noted that German Canc Res Ctr occupying in first position (3.1%); second Mem Sloan Kettering Canc Ctr (2.9%) followed by Univ Paris Saclay etc.

Table 7. Language wise of lung cancer disease research

S. No	Language	Recs	Percent	TLCS	TGCS
1	English	13769	96.8	11743	254495
2	German	264	1.9	22	149
3	French	118	0.8	28	188
4	Spanish	67	0.5	24	262
5	Hungarian	5	0.0	6	18
6	Russian	4	0.0	0	2
7	Turkish	2	0.0	0	0
8	Chinese	1	0.0	0	11

The language wise output of lung cancer disease research is given in table-8. It could be noted that the English is occupies in first position (96.8%) compared to German (1.9%).

Table 7. Relative growth rate of lung cancer disease research

Year	R.o/p	CO % of Growth	Cum.o/p	CO % of Growth
2020	2699	18.98	2699	18.98
2021	3096	21.77	5795	6.22
2022	3011	21.17	8806	17.23
2023	3053	21.47	11859	25.33
2024	2363	16.61	14222	30.78
	14222	100	43381	100

It is observed cumulative rate is gradually increased from 2020 to 2024 with 18.98% to 16.61%. Collaborative growth in increasing and decreasing manner.

Conclusion

It is due to the pivotal place of journal as a medium of scientific communication than any other form of publication; majority of the research output published in article in general. It could be deduced from the discussion that, during the study period the research paper publication trend is increasing. Highest percent of publication published in 2021. Very lowest percent of research paper published in the year 2024.

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