SCIENTOMETRIC ANALYSIS OF LEUKEMIA RESEARCH OUTPUT DURING 2010-2019

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Abstract

This assessment destroys the assessment yield of Leukemia Research all through the planet. The assessment period covers the years from 2010 to 2019. A measure of 6512 data were essentially assembled from the catch of science educational combinations and subject to data inspected by using Histcite programming. MS Excel 2010 and Vos watcher was used explicit and alliance portrayal. Assessment had been done to see the event of massive data research yield at the general level. An amount of 6512 records were assembled from the Leukemia Research data base for the evaluation through glancing through the watchword Leukemia 1480(22.73%), and thusly the enunciations being Cancer. The Author-wise scattering of the development showed that the Pui CH consolidated the focal situation with courses 41(0.63%) and Gale RP is inside the second condition with 39(0.59%) followed by Lazarus HW, Saber W, and others. Li J fused the last circumstance with 30 arrangements (0.46%). The year-wise movement of records in Leukemia Research uncovered that the year 2017 and 2018 fused the key position and as such the yield was extended (11.61%) appeared unmistakably as indicated by 2010 and 2019. Examination suitability in Leukemia research is making.

Key Words: Scientometric, Leukemia Research, Research Output, the catch of Science, cause arrangement, level of empowered exertion, Relative Growth Rate and Doubling Time.

I. INTRODUCTION

Appraisal of cytogenetic deviations adds quite far, hazard system, and supposition of the various leukemias and lymphomas, also on the appreciation of their science 1. Chronic myelomonocytic leukemia was entwined into the FAB (French – American – British) party of myelodysplastic conditions thinking about how dysplastic changes are consistently found in blood and bone marrow cells of patients with this disorder². Was reliably a to some degree questionable sort of MDS. Notwithstanding the way that CMML can present like RAEB (unmanageable whiteness with wealth impacts) and should be discernable just by the presence of monocytosis (41000 ml) within the blood, some clinical characteristics contrast from the "standard thing" presentation of MDS. Around 40 – half of CMML patients have splenomegaly what's more hepatomegaly^{3, 4}.

Barely any clinicians would separate that astounding, completely concur is crucial for the great quick of clinical danger research^{5, 6}. Decidedly less plan, coincidentally, goes with endeavors to portray "outstanding" and "totally prepared." Significant sales stay about the best way to deal with oversee give the proper degree of data to oldsters with different establishments and wish to help meet—and not bewilder—their decision, and the best way to deal with oversee gently engineer the clinical crucial to recover kids with the consistent drive to review them. Psychologic, social, and various issues confuse the picture: watchmen and clinicians accomplice round the subject of clinical foundations amidst tremendous vigorous pressing component⁷. complex social and social questions⁸.

In 1928 Delore and Borgomano portrayed the focal occasion of "benzene leukemia," remarkable leukemia in a subject matter expert so overwhelmingly familiar with benzene that none of his fellow experts could stand two months without becoming ill. Not long after this first portrayal, various cases of leukemia credited to benzene were spread⁹. In 1932, Lignac gave 0.001 ml benzene in olive oil one small step at a time to 54 white mice more than 17-21 weeks and winning concerning passing on six leukemias and two entering a leukemia clympho blastomas, at any rate no occasions of leukemia made among 1465 mice taken as controls. Coming about tries to raise leukemia by ingraining research focus animals with benzene gave problematic results since occasions of leukemia similarly made inside the control animals almost to a hazy degree¹⁰.

II. REVIEW OF LITERATURE

Jeyshankar and Babu (2013)¹¹ analysed the diverse scientometric configuration like root plan, sorts of circulations, level of participation, association's responsibility, most productivity journal, and tracked down that the most limit 79.67 per The segment of dissemination was given by a couple of scholars, out of an aggregate of 2120 appropriations, 1524 conveyances were journaled articles type papers. (1987-1991) The most awesome 0.96-degree association was recorded during the time period. Innovative work contributed 47.78% to the investigation composing. The National Cancer Institute's Journal was situated the boss effective magazine of the year with 237 responsibilities. Gupta et al. (2016)¹² Scientometric investigated cell breakdown in the lungs in India from 2005-2014 maintained on the Scopus informational collection. The examination investigated distinctive scientometric configuration like most beneficial countries, the land dissemination of the conveyance in India, best makers, most capable journals in India, and tracked down that the verybest 51299 papers contributed by the US, the head dynamic makers were N. Singh and A K Saxena With 37 responsibilities each, CS Prakash with 33 paper responsibilities.

Lakshmi and Raja (2015)¹³ Used the catch of science data base to review leukemia research writing in India. Their assessment shows that the overall advancement rate and duplicating time are moving back the example past 2014. This examination uncovered that rectilinear backslide incorporates a-581088.48 worth. The head beneficial magazine is *Annals of Hematology in Infant Blood and Cancer* and thusly the Low Production Magazine within the Top 20. The high-repeat expression during this examination is leukemia, and it depicts the best maker, pediatrician Pakshi Sameer with 64 papers. Ayyanar¹⁴, et al., did an assessment on Ebola Virus: a scientometric examination of overall conveyance yield 2015-18. A total of 3724 papers were dispersed. The examination responsibility reference impact of the best 10 most helpful countries, the impact of driving overall foundations and makers, perceive the degree of composed exertion and Relative improvement rate and increasing time. Using Web of Science data base. Ayyanar¹⁵, et al. done an examination on Norovirus: a scientometric examination of overall conveyance yield 2015-19. A total of 2683 papers were conveyed. The examination responsibility reference impact of the principle 10 most capable countries, the impact of driving overall establishments and makers, perceive the degree of facilitated exertion and Relative advancement rate and increasing time. Using Web of Science data base

III. THE OBJECTIVE OF THE STUDY

- The objective of the assessment:
- To study the maker's clever vehicle of Leukemia Research yield during the year 2010-2019.
- To surveys the level of beginning model and made exertion. for instance Single Vs. Different makers within the field of Leukemia Research.
- To survey the improvement of the course of Leukemia Research.
- To see the country-wise spread of Leukemia Research yield.
- To pick the general movement rate and duplicating season capable spread.
- To see the maker's benefit and level of joint exertion with Leukemia Research Publication.

IV. METHODOLOGY

This assessment has perceived the inspiration driving taking a gander at the Leukemia Research in scientometrics. It similarly subject to the past region of Leukemia Research ships in scientometrics kept up the model data. during this evaluation, data were downloaded from the Web of Science illuminating grouping. The appraisal period was from 2010 to 2019. A total of 6512 records were downloaded and researched by using HistCiteSoftware. Further assessment, MS Excel 2010 and Vos Viewer creating PC programs were went to research the information to make procedure and designs affiliation understanding.

Data Analysis and Interpretation

TABLE 1
YEAR-WISE DISTRIBUTION OF DOCUMENTS

Sl. No	Year	Records	%	TLCS	%	TGCS	%
1	2010	489	7.51	674	16.60	25174	16.07
2	2011	598	9.18	695	17.12	24403	15.57
3	2012	618	9.49	627	15.44	23508	15.00
4	2013	603	9.26	518	12.76	19200	12.25
5	2014	602	9.24	452	11.13	15765	10.06
6	2015	654	10.04	439	10.81	13721	8.76
7	2016	698	10.72	335	8.25	21092	13.46
8	2017	756	11.61	173	4.26	8451	5.39
9	2018	756	11.61	129	3.18	4483	2.86
10	2019	738	11.33	18	0.44	899	0.57
Total		6512	100	4060	100	156696	100

Table 1 shows the year-wise quantitative movement research yield in the Leukemia Research field in 2010-2019. The most basic number of dispersals in 2017 and 2018 added to 756 scatterings with 11.61%, the most basic TLCS 17.12%, and TGCS 16.07%. The improvement of the course of action on Leukemia Research continues to make.

TABLE 2
RELATIVE GROWTH RATE AND DOUBLING TIME OF YEAR-WISE DISTRIBUTION

Sl. No	Year	Records	Cumulative	WI	W2	RGR	DT
1	2010	489	489	0	6.19	6.19	0.11
2	2011	598	1087	6.192	6.99	0.80	0.87
3	2012	618	1705	6.394	7.44	1.05	0.66
4	2013	603	2308	6.426	7.74	1.32	0.53
5	2014	602	2910	6.402	7.98	1.57	0.44
6	2015	654	3564	6.400	8.18	1.78	0.39
7	2016	698	4262	6.483	8.36	1.87	0.37
8	2017	756	5018	6.548	8.52	1.97	0.35
9	2018	756	5774	6.628	8.66	2.03	0.34
10	2019	738	6512	6.628	8.78	2.15	0.32

The overall movement rate and duplicating time were settled and the results are tended to in Table 2. The improvement rate is overall raised in 2010 and the most un-in 2019. This is a drop from Table 2 with relative improvement rates from 2010 (6.19) to 2018 (2.15). The duplicating time (DT) shows an upward model during the evaluation time span. The data from Table 2 uncovers that the duplicating time from 2010 to 2019 is loosening up from 0.11 to 0.32.

TABLE 3
DEGREE OF COLLABORATION

Sl. No	Year	Single Authored (NS)	Multiple Authored (NM)	Total (NM+NS)	DC
1	2010	49	439	488	1.11
2	2011	51	545	596	1.09
3	2012	48	568	616	1.08
4	2013	44	554	598	1.08
5	2014	36	565	601	1.06
6	2015	42	610	652	1.07
7	2016	36	662	698	1.05
8	2017	35	718	753	1.05
9	2018	29	753	782	1.04
10	2019	29	699	728	1.04
Total		399	6113	6512	1.07

Table 3 shows the total formation of articles dissipated during the appraisal time period. In this examination, Leukemia Research fuses the degree of joint exertion. To pick the degree of joint exertion concerning entire, the join condition presented by Subramaniam (1983) was used to evaluate collaboration. It shows that the degree of supported exertion goes from zero to 9.244791.

The condition is,

$$C = \frac{NM}{NM + NS}$$

C= Degree of Collaboration in a discipline or Extent of Collaboration in a discipline

NM= Number of Multiple authored papers

NS= Number of Single-authored papers

Here $C = 3384 / (3384 + 340) = 0.9087$

TABLE 4
AUTHOR WISE DISTRIBUTION OF PUBLICATIONS (TOP 10)

Sl. No	Authors	Records	%	TLCS	TGCS
1	Pui CH	41	0.630	180	2201
2	Gale RP	39	0.599	59	1005
3	Lazarus HM	37	0.568	50	1093
4	Saber W	37	0.568	50	1172
5	Lee SJ	33	0.507	75	1292
6	Hudson MM	32	0.491	113	1348
7	Marks DI	32	0.491	43	917
8	Robison LL	32	0.491	117	1408
9	Wang Y	32	0.491	10	547
10	Li J	30	0.461	4	424

Figure 1- Author wise Distribution of Research Output

Table 4 shows the improvement of the fundamental 10 makers sharp yields. It might be seen that Pui CH beat the store with 59 (0.63%), followed by second place Gale RP (0.59%), Third spot Lazarus HM and Saber W with 37 (0.56%), and Lee SJ with 33(0.50%), Hudson MM with 32 (0.49%). Li J has last spot with 30 (0.46%).

TABLE 5
AUTHORSHIP PATTERN

Sl. No	Authors	Contribution	Cumulative	Contribution %	Cumulative %
1	1	399	399	6.13	6.13
2	2	888	1287	13.64	19.76
3	3	877	2164	13.47	33.23
4	4	766	2930	11.76	44.99
5	5	663	3593	10.18	55.18
6	6	558	4151	8.57	63.74
7	7	458	4609	7.03	70.78
8	8	368	4977	5.65	76.43
9	9	269	5246	4.13	80.56
10	10	263	5509	4.04	84.60
11	More than 10	1003	6512	15.40	100

A basic note of the appraisal is that most of the articles have been presented by second analysts. The single maker contributed 399 (6.13%) papers in this evaluation. The first and second circumstance was more than 10 molded and Second - made; It is settled as 1003 (15.40%) and 888 (13.64%) exclusively. Third makers 'commitments organized third with 877 (13.47%), and four made position fourth with 766 (11.76%). Fifth-made and sixth molded set fifth and sixth, self-rulingly, with 663 (10.18%) and 558 (8.57%). The obligations of the seventh makers and first-made masterminded seventh and eighth with 458 (7.03%), 399 (6.13%) self-sufficiently. The extra eighth makers' obligation is 368 (5.65%) and the ten makers are 263 (4.04)

TABLE 6
COUNTRY-WISE DISTRIBUTION OF LEUKEMIA RESEARCH OUTPUT (TOP 10)

Sl. No	Country	Records	%	TLCS	TGCS
1	USA	2543	39.05	2242	86031
2	Peoples R China	921	14.14	190	13310
3	UK	713	10.95	1052	31239
4	Germany	569	8.74	518	15317
5	Italy	415	6.37	405	12437
6	Canada	398	6.11	356	9544
7	France	382	5.87	373	11058
8	Australia	290	4.45	192	6345
9	Netherlands	270	4.15	313	8510
10	Japan	250	3.84	185	5554

Figure 2- Country wise Distribution of Research Output

The country-wise dispersing of Leukemia research yield is given in table 6. The USA solidified the most raised situation with 2543(39.05%) records and China in the second condition with 921(14.14%). The UK is in the third condition with 713(10.95%), and other country courses are as per the going with.

TABLE 7
DOCUMENT WISE DISTRIBUTION OF ARTICLES

Sl. No	Document Type	Records	%	TLCS	TGCS
1	Article	4035	61.96	2798	93486
2	Review	2072	31.82	1156	58658
3	Editorial Material	114	1.75	49	821
4	Meeting Abstract	86	1.32	0	78
5	Article; Proceedings Paper	60	0.92	14	731
6	Review; Book Chapter	41	0.63	24	2333
7	Article; Book Chapter	39	0.60	12	479
8	Article; Early Access	27	0.41	0	5
9	Letter	20	0.31	6	94
10	Review; Early Access	8	0.12	0	1

Table 7 shows the report sharp arrangement of scatterings. Articles cover the most favored sort is 4035(61.96%) as Review, 2072(31.82%) as Editorial Material and other scattering followed by different developments.

TABLE 8
TOP RANKED INSTITUTION AND PERCENT (TOP 10)

Sl. No	Institution	Records	%	TLCS	TGCS
1	University Texas MD Anderson CancerCtr	212	3.26	285	7742
2	Mayo Clin	151	2.32	157	4542
3	University Minnesota	146	2.24	246	5116
4	Dana Farber CancInst	140	2.15	219	5392
5	NCI	139	2.13	257	6604
6	Fred Hutchinson Cancer Res Ctr	134	2.06	254	4912
7	St Jude Children's Res Hosp	134	2.06	351	5239
8	Mem Sloan Kettering CancerCtr	117	1.80	176	3912
9	Med Coll Wisconsin	116	1.78	159	3514
10	University Penn	102	1.57	93	3193

Figure 3 – Institution-wise Distribution of Research Output

This table presents alliance vigilant evaluation productivity. It's unmistakable that the University Texas MD Anderson CancerCtr positions first position so as in by contributing 212(3.26) record scatterings Mayo Clin records the second condition with 151(2.32) record tasks. School Minnesota records the third situation with 146(2.24) record scatterings. The progressions of various Institutions are according to the going with.

TABLE 9
JOURNAL WISE DISTRIBUTION OF PUBLICATIONS (TOP 10)

Sl. No	Name of the Journal	Records	%	TLCS	TGCS
1	Blood	130	2.00	332	7727
2	Pediatric Blood & Cancer	117	1.80	136	1569
3	Biology of Blood and Marrow Transplantation	101	1.55	125	2158
4	British Journal of Cancer	97	1.49	176	5145
5	Plos One	94	1.44	0	1725
6	Journal of Clinical Oncology	75	1.15	433	6890
7	British Journal of Haematology	64	0.98	72	1230
8	Leukemia & Lymphoma	64	0.98	28	547
9	Radiation Research	64	0.98	75	1600
10	Cancer	56	0.86	56	1014

Figure 4- Journal wise Distribution of Research Output

Table 9 shows the Journal sharp course of action of developments in Leukemia research. The journal Blood records the essential condition with 130(2.00%). The ensuing position is joined by is that the Pediatric Blood and Cancer with 117(1.80%). The records of various journals are as shown by the going with.

TABLE 10
KEY WORD-WISE DISTRIBUTION OF PUBLICATIONS (TOP 10)

Sl. No	Words	Records	%	TLCS	TGCS
1	Leukemia	1480	22.73	1439	23422
2	Cancer	1436	22.05	979	56262
3	Cell	945	14.51	607	21318
4	Acute	892	13.70	1087	15763
5	Cells	688	10.57	237	14574
6	Patients	598	9.18	625	11999
7	Myeloid	583	8.95	621	9772
8	Research	556	8.54	484	11404
9	Stem	475	7.29	325	13467
10	Chronic	445	6.83	343	6404

Table 10 discussed the watchword cunning errand of spreads. The high-reiterate watchword glancing through piece of Leukemia research inside the stream examination is Leukemia1480 (22.73%), and various explanations were Cancer 1436 (22.73%) as Patients and various streams followed by various plans.

V. CONCLUSION

The evaluation wrapped up about the Leukemia research, it's speculated that the assessment advantage on Laryngeal Cancer research uncovers a reformist unexpected turn of events and generally assessment during the year 2010-2019 was picked to look the scientometric revolve around Leukemia research. To lead the above evaluation, the data were accumulated from the catch of science. Levelheaded quantitative instruments and framework were utilized this assessment. Following to get-together data and applying genuine instruments and strategies, the results were presented inside such a tables for better technique. A proportion of 6512 records were amassed from the Leukemia research informative variety for the evaluation through looking with the explanation Leukemia 1480(22.73%), and various watchwords being Cancer. The Author-wise movement of the dispersing showed that the Pui CH joined the basic condition with portions 41(0.63%) and Gale RP is in the second circumstance with 39(0.59%) followed by Lazarus HW, Saber W, et al. moreover, others. Li J consolidated the last condition with 30 dispersals (0.46%). The year-wise scattering of records in Leukemia Research revealed that the year 2017 and 2018 consolidated the standard position and thusly the yield was expanded (11.61%). All through late different years, defilement research has filled in size and impact. Clinicians, examiners, and government and state policymakers have kept up difficulty research, from studies to see low-tech, gigantic extension achievement results to a the highest point of the most amazing regions of head subverting headway science.

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