

Bibliometric Analysis of the Most Cited First One Hundred Manuscripts in Familial Mediterranean Fever

Ailesel Akdeniz Ateşi Konusunda En Fazla Atıf Alan İlk Yüz Makalenin Bibliyometrik Analizi

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Abstract

Objective: Studies investigating cumulative scientific data about a specific subject and assessing the scientific performance are named as bibliometric analysis. Familial Mediterranean Fever (FMF) is an autosomal recessive disease which is more prevalent among Turks, Jews, Armenians and Arabs. In this study, we aimed to analyse the most cited first 100 manuscripts in the field of FMF using bibliometric method.

Materials and Methods: This study was performed retrospectively by using "Thomson Reuters Web of Science" database in April 2016. The dataset was filtered to include the manuscripts only in the scope of "Science Citation Index Expanded (SCI-E)". Furthermore, the first most cited 100 manuscripts were analyzed in terms of topic, journal, author, year and institution.

Results: The database search returned 2027 manuscripts and the most cited first 100 papers were included. The most cited paper focused on genetics of FMF. Among these most cited 100 manuscripts, the study by Livneh had the highest volume of total citations with 1198. These most cited manuscripts were published in 44 journals. When these publications were evaluated in terms of countries, Israel had the most cited manuscripts with 37%, Turkey and USA with 18%, and France with 12%.

Conclusion: This work provides the most influential references related to FMF and serves as a guide to what makes a publication citable. The genetics of FMF was the most widely studied topic and Israel, Turkey, USA and France were revealed as the arbiter countries of FMF topic.

Öz

Amaç: Spesifik bir konuda birikmiş bilimsel verileri inceleyerek, o konu ile ilgili bilimsel performansı değerlendiren çalışmalara bibliyometrik çalışmalar denir. Bibliyometrik çalışmalar literatürlerin yakın takibini sağlarken araştırmacıların yeni planlayacakları çalışmalar için de yol gösterici olmaktadır. Ailesel Akdeniz Ateşi (AAA), Türkler, Yahudiler, Ermeniler ve Araplar'da daha sık görülen otozomal resesif kalıtılan bir hastalıktır. Çalışmamızda, AAA konusunda en fazla atıf almış ilk 100 makale incelenmiştir.

Gereç ve Yöntemler: Bu bibliyometrik araştırma "Thomson Reuters Web of Science" veri tabanında yapıldı. Tüm veriler seçeneğinden "Web of Science™ Core Collection" seçildi. Temel aramada (basic search) "Title" seçilerek, "Familial Mediterranean Fever" kullanılarak ve more settings'te "Science Citation Index Expanded (SCI-E)" kabul edilerek yayınlar Nisan 2016 tarihinde, retrospektif olarak tarandı.

Bulgular: Verilerden elde edilen 2027 makaleden en fazla atıf alan ilk 100 makale dahil edildi. En fazla atıf alan yazıların AAA genetiği hakkında olduğu görüldü. En fazla atıf almış ilk 100 yazı içinde; yazarlardan en fazla Livneh'in toplam 1198 atfının olduğu saptandı. En fazla atıf alan yazılar 44 dergide yayınlanmıştı. Bu yayınlar ülkelere göre değerlendirildiğinde, en fazla atıf alan yazıların birinci sırada İsrail %37, ikinci %18 ile Türkiye ve ABD ve üçüncü ise %12 ile Fransa'dan yapıldığı saptandı.

Sonuç: Bu çalışma, AAA konusunda yapılmış en etkili makaleler konusunda bilgi verirken aynı zamanda makalelerin nasıl daha fazla atıf alacağı konusunda da yol göstermektedir. AAA genetiği en fazla çalışılan konu olurken, İsrail, Türkiye, ABD ve Fransa bu konuda söz sahibi ülkelerdir.

Introduction

Familial Mediterranean Fever (FMF) is the leading hereditary autoinflammatory disease, influencing more than 100.000 people worldwide (1). The disease is characterised by autosomal recessive pattern of inheritance and episodic, self-limited attacks of fever accompanied by polyserositis (2). Especially, populations living around the Mediterranean region, including Jews, Turks, Arabs and Armenians, are predominantly affected. Because of intercontinental travel in the last century, disease may be seen widespread (3). The mutations, on MEFV gene encoding pyrin protein, are thought to be the cause of FMF. The mutated pyrin interactions in the cell are thought to result in an increased caspase-1 activation and interleukin (IL)-1 β processing, leading to an uncontrolled inflammatory state (2). The most important and severe complication, determining morbidity and mortality of FMF, is the development of amyloidosis. Colchicine is still the first-line treatment recommendation for preventing attacks and amyloidosis development (1). Publications are very important for scientific development and they provide a linkage between knowledge production, understanding and usage. Assessment of a publication about a specific subject is determination of the productivity which is an important marker of scientific development. Citation is the reference of a publication by another scientific article. Citations have been used for the assessment of a scientific publication at national, international, institutional and personal areas (4). The most influential publications are likely to be cited much more (5). Studies investigating cumulative scientific data about a specific subject and assessing scientific publication performance are named as bibliometric analysis. Bibliometric studies help researchers monitor the literature data closely, compare the scientific performance of institutions, identify important points of research focus and guide

them to design new studies (6). FMF patients with similar genotype may express different phenotypes. Environmental variance is thought to be the contributing factor of this difference (1). In the light of these data, appropriate diagnosis methodology, treatment modalities or preventive approach for FMF may vary between countries. This bibliometric study will reveal the tendency of countries to FMF diagnosis, treatment and follow-up. In this study, we aimed to evaluate the 100 most cited and influential publications about FMF. To the best of our knowledge, this is the first study evaluating FMF by using bibliometric analysis methodology.

Materials and Methods

This study was performed retrospectively by using "Thomson Reuters Web of Science" database in April 2016. This database was known as one of the extensive source providing bibliographical data on medical disciplines (7). It has a wide scope of medical articles, internal consistency and variable filtering options. With the "Web of science™ Core Collection" selection and using the search term "FMF", the dataset was composed. The dataset was filtered to include the manuscripts only in the scope of "Science Citation Index Expanded (SCI-E)". The Thomson Reuters Web of Science search returned a total of 2027 publications. These publications were filtered by using "sort by" option as selecting "Times Cites -highest to lowest". The first 100 most cited publications were included in the study. The obtained dataset was then analyzed in terms of topic, abstract, journal, author, country, year and institution. In multicenter studies; the first author's name and institution was taken into account. The subjects of the most cited first 100 manuscripts were revised by reading their titles and abstracts, individually. Additionally, individual and five-year impact factor (both for the year 2016) for each journal publishing these manuscripts were recorded.

Results

The database search returned 2027 manuscripts and the most cited first 100 papers were included. We did not filter our research by using the option “time-older to recent”. Also, we did not exclude self-citations. We have just focused on the most cited first 100 manuscript. The number of total citations ranged between 776 for Aksentijevich et al. (8) and 54 for Rabinovitch et al. (Table 1) (9). The oldest publication among these selected most influential manuscripts was by Zemer et al. (10) from Israel and published in 1986. When these publications were ranked according to the first authors; Livneh had 7 manuscripts, Gershoni-Baruch had 4 manuscripts and Ben-Cherit, Tunca, Chae, Toutiou, Booth and Ozen each had 3 manuscripts (Table 1). All the remaining authors had only one publication. Additionally, Livneh had the highest volume of total citations with 1198. This was followed by Ben-Cherit with 534 citations, Tunca with 464 citations, Toutiou with 413 citations, Chae with 406 citations, Gershoni-Baruch with 317 citations, Booth with 255 citations, and Ozen with 209 citations (Table 1). When these authors who had the highest number of publications were assessed according to their countries; 3 authors were from Israel, 2 were from Turkey and the remaining authors were from the United States, France and United Kingdom. These most cited manuscripts were published in 44 journals. Seven journals among these most cited journals had an impact factor above 10 with a 4.017 median. “New England Journal of Medicine” had the highest impact factor (45.941) and “Cell” (28.779) and “Nature Genetics” (24.416) were the following high-impact journals (Table 2). When these journals were evaluated according to the number of total citations; “Arthritis and Rheumatism” had the most citations (1337) and “European Journal of Human Genetics” (1039) and “Cell” (776) were the following journals. We could not reach the 5-year impact factors of 6 journals from ISI Web of Knowledge database. “Arthritis and Rheumatism”, “European Journal of Human Genetics” and “Seminars in Arthritis and Rheumatism” were sharing the first place according to the number of publications per journal with nine manuscripts for each. “Journal of Rheumatology” was following with 8 manuscripts and “Lancet” and “American Journal of Medical Genetics” were sharing the third line with four

manuscripts per each journal (Table 2). The evaluation of the 100 most-cited articles for the institutes is shown in Table 3. “Tel Aviv University” was the first institute with 16 publications; “Hacettepe University” was the second institute with 10 publications and “Hopital Arnaud de Villeneuve, Biochemical Genetics Laboratory” was the third institute with 8 publications. Also, “Tel Aviv University” was again the first in terms of institute citation numbers with 1937 citations. “NIAMSD, Arthritis and Rheumatism Branch, Bethesda” (n=1859) and Hospital Arnaud de Villeneuve, Biochemical Genetics Laboratory (n=1560) were the following institutes. When citation numbers per manuscripts were assessed, “NIAMSD, Arthritis and Rheumatism Branch, Bethesda” was the leading institute (n=309.8) and “Hopital Arnaud de Villeneuve, Biochemical Genetics Laboratory” (n=195) and “Hadassah University” (n=138) were the following institutes (Table 3). Except two of them (by Chae and Tunca), the most cited 10 manuscripts were older than ten years (Table 4). A limitation of the bibliometric analysis studies is that the older manuscripts may accrue much more citations. To avoid this bias in our study, the total citation numbers were evaluated per years. The study entitled “Ancient missense mutations in a new member of the RoRet gene family are likely to cause FMF” by Aksentijevich et al. (8) from the United States was again the first in terms of this assessment. Additionally, United States, Israel and France each had three, Turkey had only one publication among the first ten most cited manuscripts. Furthermore, five of these 10 most cited manuscripts were about genetics of FMF (Table 4). When these publications were evaluated in terms of countries; Israel had the most cited manuscripts with 37%, Turkey and United States with 18%, France with 12%, United Kingdom with 5%, Italy and Kuwait with 2%, and other countries with 6% (Figure 1). The genetics of FMF was the most widely studied topic (23/100).

There were only four multicenter studies. These studies according to their first author and title were as follows; Aksentijevich et al. (8) “Ancient missense mutations in a new member of the RoRet gene family are likely to cause FMF”, Bernot et al. (12) “A candidate gene for FMF”, Tunca et al. (14) “FMF in Turkey: results of a nationwide multicenter study” (14), and Toutiou et al. (33) “International Study Group for Phenotype-Genotype Correlation in Familial Mediterranean

Table 1. The top 100 cited paper in Familial Mediterranean Fever

Rank	First author	Total citations	Rank	First author	Total citations
1	Aksentijevich I. (8)	776	51	Ozen S. (58)	83
2	Livneh A. (11)	653	52	Gang N. (59)	82
3	Bernot A. (12)	559	53	Meyerhoff J. (60)	81
4	Zemer D. (10)	444	54	Samuels J. (61)	80
5	Ben-Chetrit E. (13)	367	55	Langevitz P. (62)	80
6	Tunca M. (14)	292	56	Pras M. (63)	79
7	Chae JJ. (15)	252	57	Daniels M. (64)	78
8	Mege JL. (16)	247	58	Booth MG. (65)	77
9	Centola M. (17)	242	59	Kallinich T. (66)	77
10	Touitou I. (18)	238	60	Lidar M. (67)	73
11	Samuels J. (19)	230	61	Gershoni-Baruch R. (68)	73
12	Shoham NG. (20)	209	62	Booth DR (69)	73
13	Aksentijevich I. (21)	204	63	Ben-Chetrit E. (70)	72
14	Pras E. (22)	198	64	Meinzer U. (71)	71
15	Cazeneuve C. (23)	176	65	Calligaris L. (72)	71
16	Yılmaz E. (24)	157	66	El-Shanti H. (73)	71
17	Bernot A. (25)	156	67	Dode C. (74)	70
18	Onen F. (1)	147	68	Eisenberg S. (75)	69
19	Papin S. (26)	145	69	Chae JJ. (76)	68
20	Lachmann HJ. (27)	139	70	Schwartz T. (77)	67
21	Shohat M. (28)	137	71	Livneh A. (78)	67
22	Dewalle M. (29)	133	72	Marek-Yagel D. (79)	66
23	Livneh A. (30)	130	73	Ozen S. (80)	66
24	Zemer D. (31)	126	74	Roldan R. (81)	64
25	Cazeneuve C. (32)	123	75	Flatau E. (82)	64
26	Touitou I. (33)	117	76	Gershoni-Baruch R. (83)	63
27	Pras M. (34)	113	77	Livneh A. (84)	63
28	Tunca M. (35)	112	78	Yalcinkaya F. (85)	62
29	Pras E. (36)	111	79	Schattner A. (86)	62
30	Ozdogan H. (37)	107	80	Duzova A. (87)	61
31	Livneh A. (38)	107	81	Kiraz S. (88)	61
32	Barakat MH. (39)	107	82	Holdcroft A. (89)	61
33	Yalçinkaya F. (40)	104	83	Aisen PS. (90)	61
34	Rogers DB. (41)	102	84	Belkhir R. (91)	60
35	Dowds TA. (42)	99	85	Ozen S. (92)	60
36	Stoffman N. (43)	99	86	Tunca M. (93)	60
37	Saatçi U. (44)	99	87	Garcia-Gonzalez A. (94)	59
38	Booth DR. (45)	98	88	La Regina M. (95)	58
39	Mansfield E. (46)	96	89	Touitou I. (96)	58
40	Ben-Chetrit E. (47)	95	90	Barakat MH. (97)	58
41	Lidar M. (48)	92	91	Moser C. (98)	57
42	Livneh A. (49)	92	92	Mor A. (99)	57
43	Gershoni-Baruch R. (50)	91	93	Brik R. (100)	57
44	Gershoni-Baruch R. (51)	90	94	Topaloglu R. (101)	56
45	Korkmaz C. (52)	90	95	Bakkaloglu A. (3)	55
46	Matzner Y. (53)	90	96	Padeh S. (102)	55
47	Shinar Y. (54)	88	97	Langevitz P. (103)	55
48	Chae JJ. (55)	86	98	Baykal Y. (104)	54
49	Livneh A. (56)	86	99	Majeed HA. (105)	54
50	Booth DR. (57)	84	100	Rabinovitch O. (9)	54

Table 2. Journals with the top 100 cited Familial Mediterranean Fever

Journal title	Impact factor 2016	Five year impact factor	Number of manuscripts in the top 100	Number of total citations
1. American Journal of Human Genetics	11.092	11.711	3	503
2. American Journal of Medical Genetics	-	-	4	361
3. American Journal of Medicine	4.907	4.910	1	62
4. American Journal of Reproductive Immunology	2.130	1.964	1	54
5. Amyloid-International Journal of Experimental and Clinical Investigation	1.677	1.701	1	130
6. Anaesthesia	2.315	2.124	1	61
7. Annals of Internal Medicine	15.516	14.913	2	129
8. Annals of the Rheumatic Diseases	6.411	5.915	2	146
9. Arthritis Care&Research	-	-	1	72
10. Arthritis and Rheumatism	7.677	7.417	9	1337
11. Best Practice&Research in Clinical Rheumatology	2.088	2.368	1	92
12. Biochemical and Biophysical Research Communications	2.749	2.802	1	99
13. Blood	10.896	9.768	3	406
14. British Journal of Haematology	4.490	3.733	1	86
15. Cell	29.887	28.779	1	776
16. Cell Death and Differentiation	8.254	8.168	1	145
17. Clinical and Experimental Rheumatology	2.270	2.226	2	122
18. Clinical Rheumatology	1.644	1.571	1	54
19. Current Opinion in Rheumatology	4.299	4.114	1	80
20. European Journal of Human Genetics	4.003	3.365	9	1039
21. European Journal of Pediatrics	1.277	1.440	2	170
22. Human Molecular Genetics	7.806	7.724	1	156
23. Johns Hopkins Medical Journal	-	-	1	113
24. Joint Bone Spine	1.659	1.520	1	64
25. Journal of Pediatrics	4.017	4.220	1	73
26. Journal of Rheumatology	3.151	3.225	8	753
27. Lancet	28.638	24.201	4	608
28. Medicine	4.721	6.417	3	603
29. Nature Genetics	25.556	24.416	1	559
30. Nephrology Dialysis Transplantation	3.167	3.097	1	57
31. Nephron	-	-	1	67
32. Netherlands Journal of Medicine	1.548	1.226	1	92
33. New England Journal of Medicine	52.589	45.941	3	732
34. Pediatrics	4.473	5.056	2	134
35. Pediatric Nephrology	1.936	1.878	1	55
36. Proceedings of the National Academy of Sciences of the United States of America	9.598	10.369	3	522
37. QJM-AN International Journal of Medicine	2.863	3.261	2	171
38. QJM-Monthly Journal of the Association of Physicians	-	-	2	134
39. Quarterly Journal of Medicine	2.495	2.623	1	107
40. Rheumatology International	1.270	1.417	1	147
41. Rheumatology	4.045	4.271	3	305
42. Scandinavian Journal of Rheumatology	2.640	2.401	1	79
43. Seminars in Arthritis and Rheumatism	3.681	4.017	9	644
44. British Journal of Rheumatology	-	-	1	60

Fever, Country as the primary risk factor for renal amyloidosis in FMF". Two of these manuscripts were published in 1997 and the others were published in 2005 and 2007. One of these manuscripts was about genotype-phenotype correlation; the other was a clinical study. The rest of them were about the genetics of FMF. Additionally, abstracts of 13 studies were not available in Web of Science, thus, these manuscripts could not be stratified (Figure 2).

Discussion

The present bibliometric study was conducted to evaluate the most cited first 100 manuscripts in

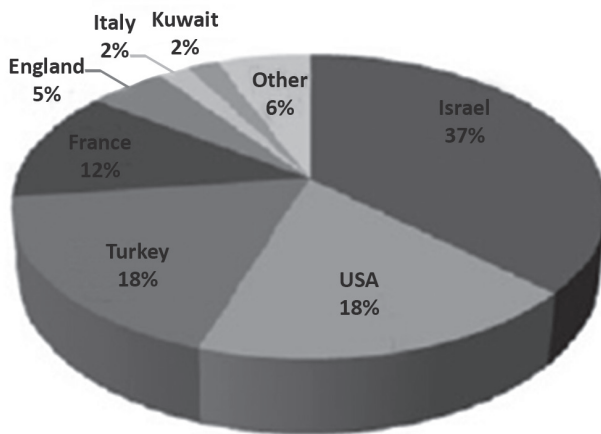


Figure 1. Proportion of citations by country

the field of FMF. The most frequent topic covered in these most influential manuscripts was the genetics of FMF, studied well with 23 publications. Israel, Turkey, United States and France were the leading countries contributing to the literature about the genetics of FMF. Although, United States is located outside the Mediterranean region, well studies have been published from these countries. Today, it is known that, FMF may be seen worldwide because of intercontinental travel (3). Intercontinental travel may be the reason of precious manuscripts published from the United States. Furthermore, the amount of financial resources allocated for studies about the genetics of FMF in these countries, seems to be the other contributing factor. The diagnosis of FMF is based on clinical findings such as recurrent fever accompanied

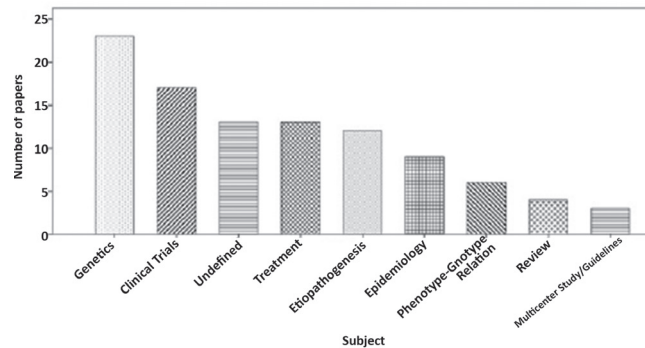


Figure 2. Most frequently referenced topics

Table 3. Institutions with the highest number of papers in the top 100

Institution	Number of publication in top 100	Total number of citations	Citations per publication
Tel Aviv University	16	1937	121
Hacettepe University	10	752	75.2
Hop Arnaud De Villeneuve, Biochim Genet Lab	8	1560	195
NIAMSD, Arthrit and Rheumatism Branch, Bethesda	6	1859	309.8
Hadassah University	5	693	138
Genet and Genom Branch, Bethesda	5	579	115.8
Dokuz Eylül University	4	611	152
Rambam Med Ctr, Institue Human Genetic	4	317	79.2
Heller Institue Med	2	570	285
UCL Royal Free and University College	2	237	118.5
İstanbul University	2	197	98.5
Ankara University	2	166	83
Fac Med Safat	2	165	82.5
Institutes with one publication	32	2638	82.4

by polyserositis (21). Genetic confirmation supports the clinical diagnosis. Homozygote M694V mutation is supposed to be an important risk factor for the development of amyloidosis (3,11,44). The results of our study indicate that FMF genetics has been studied more than clinical trials. Although clinical findings are enough for the diagnosis, the genetics of FMF seems to be much more interesting for researchers. There are only a few multicenter studies among

these most cited first 100 manuscripts (8,12,14,33). Multicenter studies, which will be conducted between all Mediterranean countries, may have more scientific value and should be encouraged. The first circumstance of worldwide scientific development is to publish manuscripts which will have numerous citations (6). The share for scientific studies allocated from the budgets of economically strong countries is much more than the other countries. This makes

Table 4. Top 10 papers with the highest citation rate

Rank	Citation rate per year	First author	Senior author	Title	Date	Institution	Country
1	38.8	Aksentijevich I.	Doggett NA.	Ancient missense mutations in a new member of the RoRet gene family are likely to cause FMF	1997	NIAMSD, Arthrit and Rheumatism Branch, Bethesda	USA
2	32.6	Livneh A.	Pras M.	Criteria for the diagnosis of FMF	1997	Tel Aviv University	Israel
3	28	Bernot A.	Grateau G.	A candidate gene for FMF	1997	Hop Arnaud De Villeneuve, Biochim Genet Lab	France
4	24.3	Tunca M.	Çobankara V.	FMF (FMF) in Turkey - Results of a nationwide multicenter study	2005	Dokuz Eylül University	Turkey
5	22.9	Chae JJ.	Kastner DL.	The B30.2 domain of pyrin, the FMF protein, interacts directly with caspase-1 to modulate IL-1 beta production	2006	Genet&Genom Branch, Bethesda	USA
6	19.3	Ben-Chetrit E.	Levy M.	FMF	1998	Hadassah University Hosp	Israel
7	14.8	Touitou I.	Touitou I.	The spectrum of FMF mutations	2001	Hop Arnaud De Villeneuve, Biochim Genet Lab	France
8	14.3	Zemer D.	Gafni J.	Colchicine in the prevention and treatment of the amyloidosis of FMF	1986	Heller Institute Med Res	Israel
9	14.2	Centola M.	Kastner DL.	The gene for Familial Mediterranean fever, MEFV, is expressed in early leukocyte development and is regulated in response to inflammatory mediators	2000	NIAMSD, Arthrit&Rheumatism Branch	USA
10	10.2	Mege JL.	Capo C.	Overproduction of monocyte-derived tumor-necrosis-factor-alpha, IL-6, IL-8 and increased neutrophil superoxide generation in behcets-disease - a comparative-study with FMF and healthy-subjects	1993	Hop St Marguerite, Immunol Lab	France

IL: Interleukin, FMF: Familial Mediterranean Fever

the manuscripts of these countries to be published in respectable journals and cited more. By this way, economically developed countries are also taking place at the top of the scientifically developed countries (106). In our study, we evaluated the contributing countries in terms of World Bank data. While Israel, United States and France were taking place in high income (>12.736 \$) countries, Turkey was in upper-middle income (4126-12.736 \$) status (107). Impact factor consisting of the citations of the manuscripts by the scientific community and influential manuscripts tend to receive more citations. Hence, the high-impact journals are believed to be higher quality and publish more influential manuscripts. In this study, journals with higher impact factors were (New England Journal of Medicine, Cell, Nature Genetics, Lancet, Annals of Internal Medicine) consisting only the 11% of all publications in the first 100 manuscripts. Additionally, the median impact factor was 4.017 and 53% of all manuscripts were published in journals with an impact factor under 5. The status of the manuscripts although published in low-impact journals but received many citations, tells us that the journal should not be evaluated only by its impact factor; the citation numbers should be considered also. When these 100 most cited manuscripts were ranked according to their first authors; Livneh was the first and Gershoni-Baruch, Tunca, Ben-Cherit, Ozen, Touitou, and Boot were the following most contributing authors. This author rank is strikingly correlated with the prevalence of FMF in those countries. Livneh and Gershoni-Baruch were from Israel and Ozen and Tunca were from Turkey. Accordingly, the prevalence of the disease in non-Ashkenazi Jews was between 1/256 and 1/500, and was 1/1073 in the Turkish population (3,11,24). Consequently, much more manuscripts have been published from the countries where FMF was more prevalent. Tel Aviv University, Hacettepe University, Hopital Arnaud de Villeneuve, Biochemical Genetics Laboratory, NIAMSD and Arthritis and Rheumatism Branch, Bethesda were the institutions with the greatest number of publications in the top 100. We already know that the manuscript number is positively correlated with the disease prevalence. Besides this, we also know that developed countries with well equipped laboratories may be arbiter, especially about the genetic disorders. The main limitation of this type of bibliometric studies

is different kind of defaults affecting the statistical results. Disproportionate citations which may arise from institutional bias, self citation, language bias or personal bias are some of those defaults. Additionally, we observed that older publications may receive more citations. To control this citation bias, the number of citations per year was calculated. This citation rate was used to rank the first 10 authors. Furthermore, we used only "Thomson Reuters Web of Science" database in our study. Although it has a wide scope of medical articles, it would be better to use more than one database. Additionally, we assume that evaluation of multicenter studies according to their first authors, is insufficient.

Conclusion

This work provides the most influential manuscripts related to FMF and serves as a guide to what makes a paper citable. "The genetics of FMF" was the most widely studied topic and Israel, Turkey, United States and France were revealed as the arbiter countries of FMF topic. In this study, we tried to attract attention to the less studied topics about FMF. Additionally, we revealed that older publications can receive more citations. Besides this, we also revealed that, developed countries with well equipped laboratories have arbiter publications about the genetics of FMF although the disease is not prevalent in their countries.

Ethics

Ethics Committee Approval: Retrospective study.

Informed Consent: Retrospective study.

Peer review: Externally and internally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: D.Y., H.B.U., Concept: D.Y., H.B.U., Design: D.Y., H.B.U., Data Collection or Processing: D.Y., H.B.U., Analysis or Interpretation: D.Y., H.B.U., Literature Search: D.Y., H.B.U., Writing: D.Y., H.B.U.

Conflict of Interest: No conflict of interest was declared by the authors.

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