Trends in Worldwide Research in Hypertension Over the Period 1999–2018: a Bibliometric Study

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Table S1: Numbers of Documents Returned by the Search in PubMed, Numbers of Documents in Web of Science, and the Number Declared as Being Original Articles by Year of Publication.

| Année | PubMed Documents | Web of Science Documents | Web of Science Articles |
|-------|------------------|--------------------------|-------------------------|
| 1998  | 4973             | 3964                     | 3645                    |
| 1999  | 5117             | 3958                     | 3627                    |
| 2000  | 5431             | 4059                     | 3646                    |
| 2001  | 5495             | 4382                     | 4009                    |
| 2002  | 5355             | 4280                     | 3792                    |
| 2003  | 5449             | 4266                     | 3734                    |
| 2004  | 5613             | 4358                     | 3835                    |
| 2005  | 5799             | 4562                     | 4023                    |
| 2006  | 6029             | 4567                     | 3946                    |
| 2007  | 6026             | 4868                     | 4227                    |
| 2008  | 6232             | 5282                     | 4574                    |
| 2009  | 6137             | 5222                     | 4456                    |
| 2010  | 6389             | 5368                     | 4612                    |
| 2011  | 6432             | 5293                     | 4576                    |
| 2012  | 7225             | 6035                     | 5217                    |
| 2013  | 7385             | 6259                     | 5386                    |
| 2014  | 7493             | 6252                     | 5250                    |
| 2015  | 7808             | 6545                     | 5631                    |
| 2016  | 7471             | 6282                     | 5320                    |
| 2017  | 7439             | 6413                     | 5242                    |
| 2018  | 7407             | 6421                     | 5205                    |

127786 104672 90308 70.67
| Année | Hypertension | Cardiac & Cardiovascular Systems | Peripheral Vascular Disease | Medical And Health Sciences | Hypertension | Cardiac & Cardiovascular Systems | Peripheral Vascular Disease | Medical And Health Sciences |
|-------|--------------|---------------------------------|-----------------------------|----------------------------|--------------|---------------------------------|-----------------------------|----------------------------|
| 1999  | 3 627        | 12 172                          | 7 573                       | 252 169                    | 100.0        | 100.0                           | 100.0                       | 100.0                      |
| 2000  | 3 646        | 12 616                          | 7 923                       | 254 390                    | 100.5        | 103.6                           | 104.6                       | 100.9                      |
| 2001  | 4 009        | 12 173                          | 8 033                       | 251 864                    | 110.5        | 100.0                           | 106.1                       | 99.9                       |
| 2002  | 3 792        | 12 023                          | 7 740                       | 253 505                    | 104.5        | 98.8                            | 102.2                       | 100.5                      |
| 2003  | 3 734        | 12 338                          | 7 813                       | 261 833                    | 103.0        | 101.4                           | 103.2                       | 103.8                      |
| 2004  | 3 835        | 13 142                          | 7 815                       | 270 095                    | 105.7        | 108.0                           | 103.2                       | 107.1                      |
| 2005  | 4 023        | 13 833                          | 8 169                       | 285 974                    | 110.9        | 113.6                           | 107.9                       | 113.4                      |
| 2006  | 3 946        | 14 002                          | 7 806                       | 300 777                    | 108.8        | 115.0                           | 103.1                       | 119.3                      |
| 2007  | 4 227        | 15 261                          | 8 399                       | 324 776                    | 116.5        | 125.4                           | 110.9                       | 128.8                      |
| 2008  | 4 574        | 15 880                          | 8 578                       | 349 141                    | 126.1        | 130.5                           | 113.3                       | 138.5                      |
| 2009  | 4 456        | 16 926                          | 8 748                       | 369 025                    | 122.9        | 139.1                           | 115.5                       | 146.3                      |
| 2010  | 4 612        | 18 621                          | 9 296                       | 395 019                    | 127.2        | 153.0                           | 122.8                       | 156.6                      |
| 2011  | 4 576        | 18 674                          | 9 059                       | 412 544                    | 126.2        | 153.4                           | 119.6                       | 163.6                      |
| 2012  | 5 217        | 18 707                          | 9 422                       | 429 088                    | 143.8        | 153.7                           | 124.4                       | 170.2                      |
| 2013  | 5 386        | 20 353                          | 9 113                       | 449 448                    | 148.5        | 167.2                           | 120.3                       | 178.2                      |
| 2014  | 5 250        | 19 608                          | 9 647                       | 458 748                    | 144.7        | 161.1                           | 127.4                       | 181.9                      |
| 2015  | 5 631        | 19 688                          | 9 638                       | 474 129                    | 155.3        | 161.7                           | 127.3                       | 188.0                      |
| 2016  | 5 320        | 20 145                          | 9 020                       | 482 526                    | 146.7        | 165.5                           | 119.1                       | 191.4                      |
| 2017  | 5 242        | 20 149                          | 8 850                       | 494 398                    | 144.5        | 165.5                           | 116.9                       | 196.1                      |
| 2018  | 5 205        | 19 930                          | 8 758                       | 495 492                    | 143.5        | 163.7                           | 115.6                       | 196.5                      |

Table S2 : Evolution of the number of publications in hypertension compared to cardiovascular fields and medical field.
| Pays  | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | Total | 1999-2008 | 2009-2018 | Evol |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|-----------|------|
| All World | 3 627 | 3 646 | 4 009 | 3 792 | 3 754 | 3 835 | 4 023 | 3 946 | 4 227 | 4 574 | 4 456 | 4 612 | 4 576 | 5 217 | 5 386 | 5 250 | 5 631 | 5 320 | 5 242 | 5 205 | 190 308 | 39 413 | 50 895 | 29.1 |
| USA | 1 125 | 1 136 | 1 265 | 1 150 | 1 159 | 1 260 | 1 213 | 1 330 | 1 443 | 1 388 | 1 486 | 1 483 | 1 515 | 1 594 | 1 522 | 1 619 | 1 506 | 1 545 | 1 477 | 27 395 | 12 260 | 15 135 | 23.5 |
| Japan | 503 | 514 | 502 | 533 | 481 | 501 | 512 | 496 | 458 | 560 | 492 | 482 | 499 | 552 | 495 | 473 | 456 | 429 | 384 | 414 | 9 736 | 5 060 | 4 676 | -7.6 |
| China | 42 | 47 | 54 | 50 | 91 | 130 | 124 | 180 | 231 | 292 | 338 | 376 | 405 | 528 | 667 | 750 | 969 | 958 | 1 023 | 990 | 8 245 | 1 241 | 7 004 | 464.4 |
| UK | 265 | 305 | 311 | 245 | 258 | 259 | 284 | 255 | 274 | 302 | 279 | 316 | 291 | 329 | 336 | 326 | 369 | 385 | 415 | 384 | 6 188 | 2 758 | 3 430 | 24.4 |
| Germany | 280 | 303 | 322 | 295 | 291 | 284 | 286 | 284 | 282 | 281 | 313 | 296 | 250 | 325 | 302 | 287 | 307 | 296 | 284 | 253 | 6 821 | 3 208 | 3 913 | 0.2 |
| Italy | 278 | 256 | 305 | 284 | 281 | 270 | 269 | 296 | 308 | 287 | 301 | 263 | 286 | 297 | 311 | 290 | 299 | 284 | 273 | 246 | 5 684 | 2 834 | 2 850 | 0.6 |
| Canada | 167 | 165 | 198 | 185 | 173 | 186 | 197 | 222 | 213 | 215 | 212 | 211 | 186 | 219 | 240 | 255 | 208 | 240 | 242 | 243 | 4 147 | 1 891 | 2 256 | 19.3 |
| France | 232 | 219 | 299 | 242 | 188 | 216 | 204 | 194 | 186 | 195 | 184 | 194 | 153 | 226 | 201 | 162 | 217 | 168 | 175 | 188 | 4 043 | 2 175 | 1 868 | -14.1 |
| Australia | 129 | 129 | 172 | 118 | 147 | 177 | 159 | 116 | 144 | 177 | 175 | 183 | 185 | 186 | 235 | 231 | 250 | 240 | 239 | 185 | 3 577 | 1 468 | 2 109 | 43.7 |
| Brazil | 63 | 68 | 67 | 99 | 84 | 103 | 114 | 110 | 186 | 201 | 186 | 227 | 220 | 229 | 239 | 233 | 270 | 252 | 256 | 277 | 3 484 | 1 095 | 2 389 | 118.2 |
| Netherlands | 98 | 100 | 127 | 103 | 116 | 148 | 154 | 139 | 155 | 176 | 167 | 153 | 163 | 184 | 191 | 194 | 249 | 181 | 202 | 199 | 3 199 | 1 316 | 1 883 | 43.1 |
| Spain | 87 | 108 | 162 | 141 | 143 | 137 | 149 | 178 | 154 | 159 | 170 | 157 | 154 | 176 | 174 | 181 | 200 | 153 | 180 | 157 | 3 120 | 1 418 | 1 702 | 20.0 |
| South Korea | 26 | 24 | 41 | 45 | 45 | 63 | 62 | 71 | 83 | 92 | 93 | 117 | 149 | 160 | 152 | 164 | 189 | 179 | 197 | 198 | 2 150 | 552 | 1 598 | 189.5 |
| Sweden | 109 | 116 | 117 | 104 | 84 | 119 | 92 | 81 | 100 | 98 | 105 | 92 | 99 | 95 | 111 | 116 | 112 | 98 | 105 | 116 | 2 069 | 1 020 | 1 049 | 2.8 |
| Turkey | 27 | 36 | 35 | 50 | 63 | 87 | 93 | 89 | 96 | 104 | 97 | 98 | 83 | 122 | 152 | 167 | 156 | 141 | 93 | 94 | 1 883 | 680 | 1 203 | 76.9 |
| Switzerland | 89 | 74 | 95 | 75 | 78 | 68 | 59 | 79 | 85 | 93 | 100 | 98 | 73 | 98 | 90 | 92 | 97 | 82 | 103 | 109 | 1 737 | 795 | 942 | 18.5 |
| Poland | 40 | 28 | 36 | 45 | 51 | 48 | 59 | 67 | 68 | 76 | 82 | 105 | 96 | 102 | 114 | 151 | 133 | 143 | 135 | 127 | 1 706 | 518 | 1 188 | 129.3 |
| Taiwan | 31 | 44 | 43 | 48 | 39 | 64 | 59 | 46 | 71 | 83 | 73 | 73 | 94 | 115 | 126 | 123 | 123 | 118 | 110 | 114 | 1 597 | 528 | 1 069 | 102.5 |
| Denmark | 41 | 58 | 67 | 57 | 63 | 63 | 70 | 63 | 64 | 61 | 65 | 74 | 74 | 89 | 78 | 97 | 90 | 102 | 87 | 87 | 1 450 | 607 | 843 | 38.9 |
| Russia | 40 | 45 | 33 | 104 | 73 | 70 | 91 | 74 | 61 | 89 | 78 | 67 | 75 | 80 | 75 | 81 | 65 | 79 | 74 | 76 | 1 432 | 682 | 750 | 10.0 |

Table S3: Numbers of Articles by Year of Publication for the twenty Countries That had the highest numbers of articles Articles Related to Hypertension over the 20-Year Study Period.
Figure S1
Figure S2:

The graph shows the number of articles published from 1999 to 2018, categorized by country:
- USA: Green line
- Japan: Purple line
- China: Blue line
- UK: Blue line (overlap with China)
- Germany: Cyan line (overlap with UK)
- Italy: Red line

Publication Year:
- 1999
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018

Number of Articles:
- 0
- 200
- 400
- 600
- 800
- 1,000
- 1,200
- 1,400
- 1,600
- 1,800
| Author          | Number of articles | Number of citations |
|-----------------|--------------------|---------------------|
| appel, lj       | 19                 | 8662                |
| asmar, r        | 10                 | 6006                |
| bella, jn       | 10                 | 1463                |
| benetos, a      | 16                 | 6324                |
| blacher, j      | 10                 | 5067                |
| bohn, m         | 10                 | 4311                |
| carey, rm       | 12                 | 1764                |
| cooper, me      | 18                 | 7506                |
| dahlof, b       | 26                 | 13647               |
| de faire, u     | 15                 | 9953                |
| de leenew, pw   | 13                 | 4452                |
| devereux, rb    | 26                 | 8910                |
| diez, j         | 11                 | 2065                |
| dzau, vj        | 10                 | 1189                |
| egido, j        | 13                 | 2170                |
| fagard, rh      | 15                 | 4168                |
| ganten, d       | 10                 | 1419                |
| gilbert, re     | 11                 | 1363                |
| haller, h       | 16                 | 3320                |
| hansson, t      | 17                 | 8574                |
| harrison, dg    | 10                 | 3411                |
| he, j           | 10                 | 2635                |
| horiuchi, m     | 11                 | 1157                |
| ichiki, t       | 12                 | 1952                |
| inagami, t      | 19                 | 2686                |
| johnson, nj     | 10                 | 2838                |
| kelly, dj       | 11                 | 1363                |
| kjeldsen, se    | 12                 | 9662                |
| levy, d         | 10                 | 4341                |
| Lindholm, lh    | 11                 | 9336                |
| london, gm      | 12                 | 5415                |
| luft, fc        | 25                 | 4271                |
| manca, g        | 19                 | 7972                |
| muller, dr      | 11                 | 1795                |
| nakamura, s     | 10                 | 1511                |
| navar, lg       | 14                 | 1970                |
| nickeng, g      | 10                 | 2365                |
| nieminen, ms    | 10                 | 6354                |
| ogihara, t      | 17                 | 2713                |
| opari, s        | 13                 | 11795               |
| osaka, t        | 10                 | 1637                |
| park, jk        | 12                 | 2004                |
| remuzi, g       | 17                 | 7843                |
| safar, me       | 17                 | 5586                |
| sasaki, s       | 11                 | 1683                |
| schifrin, el    | 32                 | 6003                |
| shimokawa, h    | 11                 | 1632                |
| stanssen, ja    | 21                 | 6880                |
| svetkey, lp     | 11                 | 4989                |
| takeshita, a    | 15                 | 2101                |
| thij, l         | 13                 | 5457                |
| toy, rm         | 21                 | 3895                |
| tuomilehto, j   | 11                 | 5938                |
| unger, t        | 10                 | 1222                |
| vaziri, nd      | 14                 | 1909                |
| verdicchia, p   | 15                 | 3732                |
| virdis, a       | 10                 | 1901                |
| Name            | Year | Code  |
|-----------------|------|-------|
| Wedel, H        | 13   | 9988  |
| Whelton, P.K.   | 13   | 3276  |
| Williams, G.H   | 10   | 1766  |
| Yusuf, S        | 11   | 11308 |
| Zanchetti, A    | 16   | 4023  |
Figure S5 : VosViewer analysis of the connections between individual researchers who have published at least 10 original articles in the Top 10%, between 2014-2018. Since not all names can be seen on the graph, tables summarize by alphabetical order the names of all 99 researchers of the the period, with the number of articles and citations.

| Author               | Number of articles | Number of citations |
|----------------------|--------------------|---------------------|
| amar, laurence       | 11                 | 837                 |
| appel, lawrence j.   | 12                 | 412                 |
| aronow, wilbert s.   | 10                 | 2203                |
| aroor, annuva r.     | 10                 | 534                 |
| asayama, kei         | 11                 | 505                 |
| azizi, michel        | 11                 | 1746                |
| bakris, george l.    | 14                 | 2333                |
| bangalore, sripal    | 12                 | 504                 |
| benjamin, emelia j.  | 10                 | 339                 |
| beuschein, felix     | 19                 | 968                 |
| bhatt, deepak l.     | 12                 | 1999                |
| boekel, michael      | 20                 | 1800                |
| boutouyrie, pierre   | 11                 | 794                 |
| burnier, michel      | 11                 | 1447                |
| carey, robert m.     | 10                 | 2356                |
| chalmers, john       | 13                 | 1660                |
| chen, jing           | 10                 | 1184                |
| chen, wai            | 17                 | 1062                |
| cheung, alfred k.    | 16                 | 2855                |
| cushman, william c.  | 15                 | 3117                |
| dansar, a. h. jan    | 11                 | 505                 |
| de la sierra, alejandro | 10            | 554                 |
| demarco, vincent g.  | 10                 | 555                 |
| dieras, pierre g.    | 14                 | 496                 |
| ewen, sebastian      | 10                 | 681                 |
| gomez-sanchez, celso e. | 14              | 670                 |
| grassi, guido        | 19                 | 1031                |
| harrison, david g.   | 26                 | 1739                |
| he, jiang           | 15                 | 1348                |
| hoshide, satoshi     | 15                 | 656                 |
| hou, fan fan         | 12                 | 647                 |
| imai, yutaka         | 14                 | 665                 |
| iani, hana a.        | 12                 | 684                 |
| jaffe, iris a.       | 13                 | 571                 |
| lasser, frederic     | 10                 | 327                 |
| janiszewicz, andrej  | 12                 | 578                 |
| kang, yu-ming        | 10                 | 332                 |
| karlo, kazumi        | 43                 | 2081                |
| karumanchi, s. anthan| 13                 | 625                 |
| kirabo, amot         | 10                 | 992                 |
| kjellsko, sverre e.  | 13                 | 1578                |
| lackland, daniel t.  | 24                 | 1162                |
| larson, martin g.    | 11                 | 393                 |
| laurent, stephane    | 13                 | 1605                |
| lenders, jacques w. m. | 10              | 638                 |
| levy, daniel         | 11                 | 556                 |
| lewis, cora e.       | 10                 | 2926                |
| madhur, meena s.     | 14                 | 1143                |
| mahfoud, felix       | 24                 | 2813                |
| mancini, giuseppe    | 40                 | 2736                |
| messerli, franz h.   | 13                 | 399                 |
| mitchell, gary f.    | 17                 | 722                 |
| montezano, augusto c.| 14                 | 839                 |
| muntner, paul        | 13                 | 837                 |
| o'brien, eoin        | 13                 | 591                 |
| ohkubo, takayoshi    | 18                 | 1190                |
| oparil, susanne      | 28                 | 5146                |
| parcak, karel        | 23                 | 943                 |

Warning: the number of citations of a publication strongly depends on its year of publication. The older it is, the more likely it is to be cited. Therefore, citation rates cannot be compared between two different time periods.
| Name               | Contribution | ID   |
|--------------------|--------------|------|
| Padmanabhan, Sandosh | 13           | 960  |
| Parati, Gianfranco  | 29           | 1411 |
| Prabhakaran, Dorairaj | 10         | 631  |
| Prejibiz, Aleksander | 10          | 450  |
| Rahman, Mahboob     | 13           | 2893 |
| Rainer, William E.  | 10           | 396  |
| Ralada, Mohan K.    | 11           | 678  |
| Redon, Josep        | 11           | 1393 |
| Reincke, Martin     | 16           | 829  |
| Robledo, Mercedes   | 10           | 513  |
| Rossignol, Patrick  | 11           | 450  |
| Saleh, Mohamed A.   | 13           | 926  |
| Sato, Fukutsuhi     | 10           | 611  |
| Schiffri, Ernesto L. | 15          | 710  |
| Schlaich, Markus P. | 12           | 1043 |
| Schmieder, Roland E. | 20          | 2239 |
| Segers, Patrick     | 12           | 591  |
| Shimbo, Daichi      | 18           | 777  |
| Sowers, James R.    | 11           | 611  |
| Staessen, Jan A.    | 20           | 956  |
| Stergiou, George S. | 13           | 558  |
| Thijs, Lutgarde     | 13           | 696  |
| Toouy, Rian M       | 26           | 1181 |
| Townsend, Raymond R. | 23          | 2602 |
| Unger, Thomas       | 10           | 362  |
| Vaidya, Anand       | 10           | 302  |
| Vasan, Ramachandran S. | 16        | 615  |
| Wang, Jianguang     | 27           | 1033 |
| Weber, Michael A.   | 14           | 1042 |
| Wheelton, Paul K.   | 26           | 5564 |
| Williams, Bryan     | 18           | 2221 |
| Woodward, Mark      | 15           | 1280 |
| Wright, Jackson C., Jr. | 14       | 5192 |
| Wu, Jing            | 12           | 795  |
| Xiao, Liang         | 11           | 746  |
| Iono, Yoshibo       | 14           | 850  |
| Yusuf, Salim        | 17           | 1663 |
| Zanchetti, Alberto  | 15           | 1687 |
| Zhang, Yan          | 11           | 585  |