The 50 most cited articles about wrist surgery

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Abstract

The purpose was to establish a ranking of the 50 most cited articles about wrist surgery and analyse their features. Science Citation Index Expanded was used to identify the 50 most frequently cited orthopaedic journal articles written in English, searching for the topic “wrist surgery” in the subject category “Orthopaedics”. Then, we analysed the number of citations, citation density, authorship, article institution, the year of publication, the country of origin of the article, name and impact factor of the journal, and publication type of the article. The 50 most cited articles were published in only 6 of the 74 journals included under the category “orthopaedics”. Citation count ranged from 256 for the first one to 67 for the 50th article. Most of them were written by American authors. These articles were published between 1991 and 2011. “Distal Radius Fractures” was the most common issue. This type of bibliographic analysis could be particularly useful for other young Authors who would like to improve their research in wrist and hand surgery and make their publications more citable and appreciated by the scientific community.

Introduction

Nowadays, in the era of the Internet the importance of scientific publications is growing more and more. With a few clicks, a modern physician can find hundreds of articles about a single issue, so it seems easy to get lost in this storm of information. For this reason, it could be useful to make a selection of the most important articles. The relevance of an article in the academic world can be measured on the basis of the number of times it has been cited. The number of citations is used as a determinant of the influence of an article in the field of interest. On the other hand, a huge quantity of citations must not be considered as a synonym of high quality of the article. Recently, many authors have published about the “top-50-most-cited articles” in many different medical specialties and super-specialties. As for orthopaedic literature, we can find rankings of the most cited articles about spine surgery, paediatric surgery, shoulder surgery, hip and knee surgery, and other fields. To our knowledge this is the first analysis of the 50 most cited articles about wrist surgery. For our research we used a huge database called Web of Science Core Collection and available on the Internet. This database comprehends all the world’s leading scholarly literature in the sciences, social sciences, arts, and humanities and examine proceedings of international conferences, symposia, seminars, colloquia, workshops, and conventions from 1970 onwards.

Materials and Methods

The aim of our work was to define and analyse the 50 most cited articles about wrist surgery.

The research was conducted in October 2017 using the Web of Science Core Collection database through the ISI Web of Knowledge. We searched all the articles written in English about the topic “wrist AND surgery”. Then, we sorted them from the most cited to the least cited and refined our research using the category “ORTHOPEDICS” which comprehends 74 journals. We selected the first 50 articles, excluding 5 articles that were off topic. For each article we analysed the number of citations, authorship, article institution, the number of calculated citations, the year of publication, the country of origin of the article, name of journal, and publication type of article. In addition, we determined the citation density that is the total number of citation/years since publication and the impact factor of the publication journals. Based on guidelines from Journal of Bone and Joint Surgery-American Volume, level of evidence for clinical articles was independently determined by two reviewers. In case of disagreement (3 articles), the final decision was made by a consensus of three reviewers.

Results

We found a total number of 1942 publications written in English about wrist surgery and they were all journal articles, except for 2 reviews. The titles of the top 50 articles are listed in Table 1 along with number of citation and the calculated citation density, i.e. the number of citations an article has received on average per year since its publication. The article “Volar fixation for dorsally displaced fractures of the distal radius: A preliminary report” was found to be the most cited with 256 citations. The number of citations ranged from 256 citations for the first placed and 67 citations for the last one. The top 50 articles were published in 6 of the 74 journals categorized under the topic “Orthopaedics”. Almost all articles were published in American journals except for two articles that were published in British journals. In particular, about three-quarters of the total number were published in the “Journal of Hand Surgery-American Volume” (n=38), while the remnants were published in the “Journal of Bone and Joint Surgery-American Volume” (n=7), in the “Journal of Bone and Joint Surgery-British Volume” (n=2), in the journal “International Orthopaedics” (n=1), in the journal “Clinical Orthopaedics And Related Research” (n=1) and in the journal “Arthroscopy” (n=1). As for the Authors, most of them worked in the USA (n=40), the other were from Japan (n=4), England...
(n=2), Canada (n=2), Sweden (n=2), Switzerland (n=2), Australia (n=1) and Germany (n=1) (4 articles were written by authors from two different countries). The most frequently named author was Berger RA with 5 of the top 50 articles followed by Fernandez DL with 3 articles. The top 50 articles were published between 1991 and 2011 and more than half of them were published between 2000 and 2005. Figure 1 shows the distribution of the published articles per year. We even analysed the issues of the 50 most cited articles and we found that the most popular issue was “distal radius fractures” (n=15), followed by “wrist motion and anatomy” (n=7) (Figure 2). Level IV was the most frequent level of evidence.

Table 1. Continued from previous page.

| Rank | Article                                                                 | N. citations | Citation index |
|------|------------------------------------------------------------------------|--------------|----------------|
| 35   | Murase T, Oka K, Moritomo H et al. Three-Dimensional Corrective Osteotomy of Malunited Fractures of the Upper Extremity with Use of a Computer Simulation System, J Hand Surg Am | 82           | 9,29           |
| 36   | Steinmann SP, Bishop AT, Berger RA. Use of the 1/2 intercompartmental supratrochlear artery as a vascularized pedicle bone graft for difficult scaphoid nonunion, J Hand Surg Am | 80           | 5,22           |
| 37   | Egel K, Walsh M; Tejwani N, et al. Bridging external fixation and supplementary Kirschner-wire fixation versus volar locked plating for unstable fractures of the distal radius - A randomised, prospective trial, J Bone Joint Surg Br | 78           | 8,67           |
| 38   | Wei DH, Raiman NM; Bottino CJ, et al. Unstable Distal Radial Fractures Treated with External Fixation, a Radial Column Plate, or a Volar Plate A Prospective Randomized Trial, J Bone Joint Surg Am | 77           | 9,42           |
| 39   | Jebson PJL, Hayes EP; Engh ER. Proximal row carpectomy: A minimum 10-year follow-up study, J Hand Surg Am | 76           | 5,36           |
| 40   | Short WH; Werner FW; Green JK; Masaoka S. Biomechanical evaluation of the ligamentous stabilizers of the scaphoid and lunate: Part II, J Hand Surg Am | 75           | 5,92           |
| 41   | Mckay SD; Macdermott JC, Roth JH, Richards, RS. Assessment of complications of distal radius fractures and development of a complication checklist, J Hand Surg Am | 74           | 4,63           |
| 42   | Trumble TE, Gilbert M; Vedder N. Isolated tears of the triangular fibrocartilage: Management by early arthroscopic repair, J Hand Surg Am | 73           | 3,53           |
| 43   | Ruch DS; Poehling GG. Arthroscopic management of partial scapholunate and lunotriquetral injuries of the wrist, J Hand Surg Am | 73           | 3,42           |
| 44   | Wintman BJ; Gelberman RH; Katz, JN. Dynamic scapholunate instability - results of operative treatment with dorsal capsulodesis, J Hand Surg Am | 73           | 3,34           |
| 45   | Meinberg EG; Stern PJ. Incidence of wrong-site surgery among hand surgeons, J Bone Joint Surg Am | 69           | 4,73           |
| 46   | Jupiter JB; Ring D; Weitzel PP. Surgical treatment of redisplaced fractures of the distal radius in patients older than 50 years, J Hand Surg Am | 69           | 4,55           |
| 47   | Fowler JR, Gaughan JP; Ilyas AM. The Sensitivity and Specificity of Ultrasound for the Diagnosis of Carpal Tunnel Syndrome: A Meta-analysis, Clin Orthop Relat Res | 68           | 10,59          |
| 48   | Divellabiss BJ; Sullerman C; Adams BD. Early results of the universal total wrist arthroplasty in rheumatoid arthritis, J Hand Surg Am | 68           | 4,39           |
| 49   | Minami A; Kato H. Ulnar shortening for triangular fibrocartilage complex tears associated with ulnar positive variance, J Hand Surg Am | 68           | 3,58           |
| 50   | Moran SL; Cooney WP, Berger RA; Strickland J. Capsulodesis for the treatment of chronic scapholunate instability, J Hand Surg Am | 67           | 5,29           |
experimenting. In this perspective, the analysis of literature could be an interesting instrument to understand which issues are more investigated and which less, which authors are conducting the most appreciated studies and which direction research will follow in the near future. Even if the number of citations an article has received is not a marker of quality, it can suggest us how much popular the article is inside the scientific community. Before our study, similar bibliometric analysis have been conducted in all medical fields. Also in the Orthopaedic branch, many other Authors have published rankings of articles on the basis of the citation count, both in the field of general Orthopaedic and of Orthopaedic subspecialties. As for the surgery of the upper limb, we found publications on the most cited articles on shoulder, elbow and hand surgery, but none about wrist surgery. Therefore, our work is the first bibliometric analysis on this issue to our knowledge.

Our analysis has evidenced the important influence that the American literature has in this field: 48 of 50 articles are published on American journals and more than three quarters of the Authors in the ranking works in the USA.

“Distal radius fractures” proved to be the most cited topic. The issue of the surgical technique for this fracture seems to be an “evergreen” in literature and the debate is still open.

Obviously, this type of bibliometric analysis is influenced by many different factors. Our research depends on the article categorization of Web of Science that can exclude some relevant articles. A time effect is unavoidable and more recent articles are at a disadvantage. This citation analysis could not evaluate self-citation, citations in lectures and textbooks, and web-based literature. Finally, we must considered the “snow-ball effect” to citations because other authors are more likely to cite an article because of previous citations, rather than for its content or quality. The aim of this work was to define a list of articles which have been influential in the development of the modern wrist surgery and it could be useful for residents and young hand surgeons to find the milestones of the literature of this field. This list could be also an opportunity to identify new issues that need still to be properly investigated.

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