



Review

A bibliometric analysis of the citation classics of acute appendicitis



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HIGHLIGHTS

- Hundred most cited articles on appendicitis. Six level 1a, 20 studies at level 1b.
- Most cited articles on appendicitis higher quality evidence only in more recent times.

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ABSTRACT

Introduction: Acute appendicitis is one of the most commonly encountered emergency surgical conditions. An understanding of the most highly cited research works in this field is key to good evidence based clinical practice.

Aims: To perform a bibliometric analysis on the 100 most frequently cited articles in the field of acute appendicitis.

Methods: The database of the Institute for Scientific Information (ISI) Web of Science Expanded citation index was searched to identify the 100 most frequently cited articles in the field of acute appendicitis. The web of science expanded citation index tracks article citations made since 1946.

Results: The top 100 most frequently cited articles were selected for analysis in this series. The most frequently cited article was cited 649 times and the least cited three article 93 times. The average number of citations per article was 167.74. The top 100 cited articles originated from 17 countries. Over half of the papers originated from the USA. Fifty-one of the papers concentrated on diagnostics of acute appendicitis. Thirty-six papers looked at the treatment of acute appendicitis with 30 of these dealing with the surgical management of the disease. There were 6 studies at level 1a, 20 studies at level 1b and 43,5,17 and 9 studies at levels 2, 3, 4 and 5 respectively.

Conclusions: Bibliometric analysis of the citation classics in a given field can provide interesting insights into the relationship between the quality of research outputs and clinical practice. The study of acute appendicitis remains an active field of research with a growing body of higher quality evidence underpinning our clinical practice.

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1. Background

The earliest known documentation of practice in the field of appendicitis dates back to Berengarius Carpus, professor of surgery at Pavia and Bologna universities, who described the appendix in 1522 [1]. The first successful appendectomy was performed in 1735 by Claudius Amyand. In 1886 Reginald Heber Fitz published a paper on appendicitis and named the procedure an appendectomy [2].

Appendicitis, as the most common general surgical emergency [3], generated an enormous body of medical literature over the course of the 20th and early 21st centuries still impose a research conundrum as there is little representation of new understanding on appendicitis in a high quality research [4].

The science of bibliometrics is the branch of information science which deals with the study of the meta-data surrounding published material [5]. This data can be used to quantify and characterise published works in order to obtain an overview of the major outputs within a given field of study. The citation index of a paper reflects the total number of citations of that paper that have accrued over time and can be taken as a proxy indication of the overall impact of that article on the field to which it refers [6].

Recently, bibliometric studies of the medical literature have appeared in increasing numbers. Many institutions are making use of bibliometric analyses to assess their research output and performance and several journals publish their own series of so called “citation classics” [7].

The purpose of this study was to identify the most frequently cited articles in the field of acute appendicitis and to perform a bibliometric analysis to elicit the characteristics of this body of work.

To date, no bibliometric analysis of the research outputs in this field has been undertaken.

1.1. Methods and design

The database of the Institute for Scientific Information (ISI) Web of Science expanded citation index tracks all article citations made since 1946 (therefore any citations that predate this cannot be tracked). This database was searched by topic on February 24th, 2016 using the keywords “Appendicitis”; “Acute Appendicitis”; “Appendectomy” and “Appendicectomy” to identify citation classics in the field of acute appendicitis. These articles were then ranked in order of number of citations received by each publication and the one hundred most frequently cited articles were selected for inclusion in our analysis. The abstracts of these articles were obtained to determine their relationship to appendicitis. Any article not directly related to the main topic of study was to be discarded and the next most cited article retrieved until the 100 most cited and directly related articles were obtained.

The full text of each article in this series was then obtained and reviewed by the authors. The following data was extracted: Article title, type of article, journal of publication, institution, country of origin, authorship, number of citations, year of publication and level of evidence. Each paper was assigned to a single country of origin according to the corresponding author. The articles were classified according to their status as clinical or non-clinical studies, whether they dealt with basic science, diagnostics or therapeutics.

1.2. Results

The search retrieved 10975 articles. Fifteen articles were excluded on the basis of irrelevance to appendicitis.

The most frequently cited article was cited 649 times and the least cited three article 93 times. These most cited articles were published between 1971 and 2010 (Fig. 1). The average number of

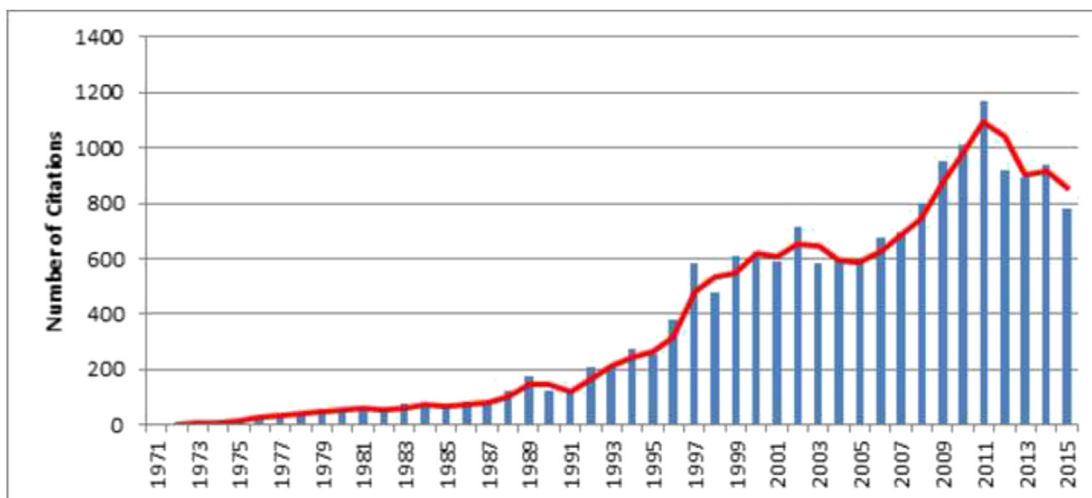


Fig. 1. Number of citations per year.

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