



A comparative bibliometric analysis of the top 150 cited papers in hypospadiology (1945–2013)

F. O'Kelly^a, G.J. Nason^b, L.C. McLoughlin^a, H.D. Flood^b, J.A. Thornhill^a

^aDepartment of Urological Surgery, Tallaght Hospital, Dublin, 24, Ireland

^bDepartment of Urological Surgery, University Hospital, Limerick, Ireland

Correspondence to:

F. O'Kelly, Department of Urological Surgery, Tallaght Hospital, Dublin, 24, Ireland, Tel.: +353 1 4414127; fax: +353 1 4412596

fokelly@rcsi.ie (F. O'Kelly)
nasong@tcd.ie (G.J. Nason)
louisemccloughlin@rcsi.ie (L.C. McLoughlin)
hugh.flood@hse.ie (H.D. Flood)
jturology@gmail.com (J.A. Thornhill)

Keywords

Hypospadias; Bibliometric analysis; Citation; Impact factor; Paediatric urology; Journal Citation Reports

Received 18 March 2014

Accepted 20 November 2014

Available online 4 March 2015

Summary

Introduction

Hypospadias, the most common congenital malformation of the penis, is characterized by an abnormal ventral opening of the urethral meatus, abnormal ventral curvature of the penis, and an abnormal distribution of the foreskin around the glans, with a ventrally-deficient hooded foreskin, and has been described in modern peer-reviewed literature since Noble's description in 1853. A dramatic increase in the literature on hypospadiology has focused on two main topics: The aetiology of the condition including molecular mechanisms and environmental influences, as well as surgical techniques to repair the defect, however there have been a number of facets of research stemming from this poorly understood condition in a developing subspecialty (Figure).

The majority of these publications focus on the evolution of surgical technique and management. Urethral reconstruction should offer the ability to stand to urinate and combine a satisfactory cosmetic result. The tubularized incised plate repair, popularized by Snodgrass et al., and the Mathieu repair, have been the mainstay for distal hypospadias, however, there have still been a large number of well-described techniques, with no consensus as to the ideal method of repair, some of which is attributed to non-uniform standards of reporting outcomes. There is also no standard objective means to qualitatively assess the importance of each of these contributions.

Objective

The objective of this study was to determine the top 150 peer-reviewed articles in the field of hypospadiology by way of citation analysis as a means to determine the importance/relevance of each contribution throughout 8 decades of research.

Study design

A cited reference search was carried out for indexed citations within Web of Science™ Core Collection. The top 150 indexed cited articles containing the topic "hypospadias" in specific subject categories were compiled using a component of Science Citation Index command. References were then

evaluated, and analysed across a number of indices, and over time.

Results

The mean number of citations was 76 for each article. The top 150 articles were published across 21 countries, with the majority originating from the USA. The lead research institution was the University of Texas (Southwestern) Medical Center. In total, the top 3 centers represented 33 publications within the top 150 citations. The most commonly utilized journal was the Journal of Urology. The most cited author was W.T. Snodgrass. 39% papers in the top 150 cited articles were published prior to 1990. Three out of the five papers cited in the 1940s dealt with operative technique to repair hypospadias. The period 2000–2010 in contrast, demonstrated a significant inverse correlation between molecular biology citations, and those for operative techniques, with the incidence of the latter dropping to 6% of all cited papers.

Discussion

This is the first study of its kind to analyse the most influential articles in hypospadiology, and their characteristics assessed for authorship, content and impact factor. Furthermore it allows data analysis by topic and between time points. This not only de-clutters the wealth of accumulated data on this subject, but also provides an important adjunct to education and training. As with this study, other citation analytical studies in urology found a significant preponderance in cited studies originating from the USA. The prevalence of the US in cited papers doesn't reflect any inherent bias, just a greater number of publications.

Conclusion

Although there are inherent potential elements of bias in citation analysis, this study demonstrates that citation analysis in a complicated topic can provide a high-throughput, uncomplicated method of quickly deciphering important contributions of authors and institutions to the field of hypospadias research.

Introduction

As the field of paediatric urology has formed and matured, and with new surgical techniques providing outcomes that are believed to be better than those of the past, the literature related to hypospadias has grown substantially. Furthermore, the investigations of molecular mechanisms and possible environmental influences, although extensive, have not yet yielded any simple explanations.

Other issues have also been scrutinized, without consensus at this point in time, such as: self-esteem, the development of gender identity, body image from both the genital deformity and following reconstruction, reduced quality of life, depression and anxiety [1–4].

Despite the abundance of published literature, there remains a significant level of discordance in many aspects of hypospadiology. There is still no consensus on the aetiology of this condition, including molecular mechanisms and the associated environmental factors. Thirty-seven studies have been published within the last five years, of which 25 have focused on potential environmental factors including parental chemical exposure, parental characteristics, nutrition and hormones. The remaining papers have studied the hormone-dependent phase of molecular mechanism, namely: androgen and oestrogen-related genes. Of these, there have been no proven direct associations [5]. There are also data refuting an increased incidence in hypospadias, as part of a larger debate on the potential effects of so-called 'endocrine disruptors' such as phthalates and bisphenol-A, on male reproductive health [6].

There has been a volume of literature on the evolution of surgical techniques in hypospadias repair. The current goals of hypospadias repair include a functional penis that is adequate for sexual intercourse. Urethral reconstruction should offer the ability to stand to urinate and combine a satisfactory cosmetic result. Whether single-stage or two-stage procedures, or even with distal, less-complex urethral reconstructions, there is no consensus as to the ideal method of repair, some of which is attributed to non-uniform standards of reporting outcomes [7].

Given the prevalence of literature on hypospadiology, the issue of redundancy becomes apparent when results are duplicated in different publications by the same author/group, as well as indirect peer opinion as to the importance of a particular publication by way of citation frequency. The establishment of a citation rank list has been often used in medicine to identify peer-reviewed publications that have had the greatest intellectual influence [8]. When a peer-reviewed article references another publication, a citation is received. Citation analysis involves ranking and evaluating an article/journal based on the number of citations it receives. In addition to determining the most frequently cited articles, this analysis is also used to rank journals in terms of impact. Although the significance of citation analysis remains controversial, proponents argue that this method provides an objective method with which to determine the significance of an article or journal [9–11]. In the present study, this bibliographic analysis was undertaken to see where things stand today in the field that Sheldon and Duckett (1987) described as 'hypospadiology' [12]. It is the first study of its kind to analyse the most

influential articles in the field of hypospadiology, and to assess their characteristics for authorship, content and impact factors.

Methods

To identify the most frequently cited articles published in hypospadiology, a cited reference search was carried out for indexed citations within the Web of Science™ Core Collection (Accessed 3rd February 2014) (Institutional Access; University of Dublin–Trinity College). The top 150 indexed, cited articles out of a total of 2457 citations containing the topic 'hypospadias' in the following subject categories were selected for analysis: urology/nephrology, urethra/development, paediatrics, surgery, genetics/hereditary and endocrinology/metabolism. Using a previously published protocol [10], the 'cited reference search' (a component of the Science Citation Index) command was used for each of these journals to identify the most frequently cited articles. References were evaluated for pertinence to the natural history, diagnosis, and/or management of hypospadias by two independent reviewers. The impact factors of the journals were cross-referenced with the 2012 edition of Journal Citation Reports (JCR): Science Edition (1945–2013). The impact factor of a journal is calculated based on the mean number of citations per year given to those papers in a journal that were published during the two preceding years.

In total, 48 journals were identified in the top 150 cited articles (10 urological/subspeciality and 38 medical/research). This database included publications from the 68-year period of 1945–2013. Each of the 48 journals was searched and every article with more than 40 citations was included in a comprehensive, ranked list.

The top 150 cited articles were compiled in the final list (Table 1). Complete inter-author agreement of the relevance led to the inclusion of a publication. Articles that were felt to be irrelevant to hypospadias or its management were excluded. The articles were accessed and reviewed online using MEDLINE. When relevant articles were unavailable online, they were received in print format via the University of Dublin, Trinity College library. The articles were reviewed and the data were tabulated according to the number of citations, country and institute of origin, journal, impact factor, authorship and topic.

Results

The mean number of citations for the top 150 articles was 76 (range 40–424), with articles on the list published between 1946 (Cecil et al., *Journal of Urology*) [13] and 2010 (Toppari et al., *Birth Defects Res A*) [14]. The top 150 articles were published from 21 countries, with 62% originating from the USA. The top three research institutions included the University of Texas (Southwestern) Medical Center, The University of California – San Francisco Medical Center, and the Children's Hospital – Philadelphia. In total, these represented 33 publications within the top 150 citations (22%) (Table 2). The most commonly utilised journal was the *Journal of Urology*, which published 58 of the top 150 cited hypospadias papers (39%). The most cited author

Download English Version:

<https://daneshyari.com/en/article/4162271>

Download Persian Version:

<https://daneshyari.com/article/4162271>

[Daneshyari.com](https://daneshyari.com)