Commentary on Kidney Transplantation

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Abstract

Kidney transplantation, also known as renal transplantation, is the transplantation of a kidney into a patient who has End-Stage with Kidney Disease (ESRD). Depending on the source of the donor organ, kidney transplantation is typically classified as deceased-donor (formerly known as cadaveric) or living-donor transplantation. Living-donor kidney transplants are further classified as genetically related (living-related) or unrelated (living-unrelated), depending on whether the donor and recipient have a biological relationship.

Introduction

A person with ESRD must undergo a thorough medical evaluation before receiving a kidney transplant to ensure that they are healthy enough to undergo transplant surgery. They can be placed on a waiting list to receive a kidney from a deceased donor if they are deemed a good candidate. People with ESRD who receive a kidney transplant live longer than people on dialysis and may have a higher quality of life. Immunosuppressants (medications that suppress the immune system) must be taken by kidney transplant recipients for the rest of their lives to prevent their bodies from rejecting the new kidney. Because of the long-term immunosuppression, they are more vulnerable to infections and cancer. Kidney transplant rejection can be classified as either cellular or antibody-mediated. Antibody-mediated rejection can be hyperacute, acute, or chronic, depending on how long it occurs after the transplant. A kidney biopsy should be obtained if rejection is suspected.

Kidney transplantation (KT) is now a common treatment option for end-stage renal disease. However, no bibliometric analyses of KT research have been conducted to date to identify the most influential articles. The goal of this study is to identify and characterize the 100 most cited articles on KT, as well as to clarify trends in accomplishments in this field. Kidney transplantation (KT) has become a common treatment option for patients with end-stage renal disease. With the development of immunosuppressants, KT, which was implemented approximately 50 years ago, has improved long-term results. Donors, both living and deceased, are required for KT. Immunosuppressants have been developed to improve graft survival, and pathology has advanced to aid in the diagnosis of kidney grafts susceptible to immune conditions. KT research focuses on rejection, pathology, and immunosuppressants in particular. Bibliometric analysis is used to identify publication trends, such as authorship, publication years, countries, and topics in a specific field. It seeks to identify research themes that have had the greatest impact on the development of a field's understanding and management. The list of citation rankings can be used to determine the intellectual impact of a publication.

Many medical researchers have identified and analyzed the most influential articles in various medical fields, such as orthopedic surgery, plastic surgery, and oncology, using citation ranking. However, no bibliometric analyses of KT research have been conducted to date to identify the most influential articles.

Bibliometric analysis has been used in a variety of fields to identify publication trends. Since 2014, only the bibliometric analyses of overall transplantation, Liver Transplantation (LT), and heart transplantation have been sequentially published in the field of solid organ transplantation. Unfortunately, no previous bibliometric studies on KT fields have been conducted. This is, to the best of our knowledge, the first bibliometric study to evaluate the KT subspecialty. There are distinctions between LT and KT in the research topics. Many studies on donors, including allocation and surgery, including preservation and size mismatching, are included in the T100 on LT. The T100 on KT is more concerned with immunology and clinical aspects than with surgery. The introduction of innovative surgery and the development of immunosuppressants is an important theme in the history of KT. Voronoy performed the first human KT on a deceased donor in 1933. Despite the poor graft outcome, this was a groundbreaking procedure in the history of clinical KT. This historical event was first reported in 1936 in a Spanish journal. Murray reported a successful KT in identical twins in 1955, earning him the Nobel Prize in 1990. The first immunosuppressants, including azathioprine and 6-mercaptopurine, were used in a KT from a deceased donor in 1962. The combination of azathioprine and corticosteroid has since become the standard immunosuppressive treatment. Various immunosuppressants have been introduced more quickly since then, improving KT results. Due to the scarcity of kidney allografts, there has recently been increased interest in and research on expanded criteria donors, such as elderly deceased and high Kidney Donor Risk Index donors. Many studies, such as hypothermic machine perfusion and donor pre-treatment, are being conducted to improve the preservation of kidney allografts.

VOS viewer analyses large-scale bibliographic data as well as the relationships between keywords chosen by authors for their publications to cluster publications based on direct citation relationships. It also displays the time trend of keyword changes to inform the research field's progress. In a recent bibliometric analysis, trend analysis was diversified using VOS viewer's keyword mapping methods. The keywords in the T100 on KT are grouped into five categories: transplantation, graft survival, immunosuppressant, rejection, and post-transplant clinical outcome. Interestingly, keyword analysis using VOS viewer reveals that keywords like "malignancy" or "cardiovascular diseases," which are complications that can occur after KT, have emerged relatively recently, and despite KT's long history. The keywords expanded criteria donor, graft preservation, and immune tolerance, which have recently increased interest in transplantation, were not included. Although there are numerous topics related to transplantation, it is difficult to categorize them as KT studies. The authors believed that the author's artificial classification could introduce another bias.