

Availability and Ease of Access to Facilities and Resources to Diagnose and Manage Glomerular Disease in Low-Resource Settings

Ahasan Kabir*

Department of Urology, George Institute for Global Health, UNSW, New Delhi, India

*Corresponding author: Ahasan Kabir, Department of Urology, George Institute for Global Health, UNSW, New Delhi, India Email:

kabirahasan345@yahoo.com

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Description

According to the global burden of disease study, diabetes and hypertension are the leading drivers of increased chronic kidney disease disability-adjusted life years worldwide; however, glomerulonephritis is the second biggest driver of chronic kidney disease disability-adjusted life years after diabetes in low resource settings. The diagnosis of glomerular diseases rests on kidney biopsy, with the exception of childhood nephrotic syndrome. Glomerular diseases are among the leading causes of kidney failure requiring replacement therapy. Glomerular disease is one of the few causes of chronic kidney disease that can be treated, and molecular and serological testing has made it easier to diagnose and classify the condition. This has led to more effective and tailored treatment options for glomerular disease. Guidelines for managing glomerulonephritis using evidence-based approaches have been established by Kidney Disease Improving Global Outcomes⁷. Although the guidelines have a global scope and aim to reduce variations in practices and improve health outcomes worldwide, their implementation is contingent on the availability of resources for making an accurate diagnosis and access to treatment options. Nonpharmacological ways to control weight and blood pressure and the use of angiotensin-blocking drugs are used to treat glomerular diseases. Several of the following immunosuppressants are used on patients at high risk of adverse outcomes: mycophenolic acid, calcineurin inhibitors, corticosteroids, and, more recently, biological agents that affect B cells and the complement pathway. Although it has yet to be established, the capacity of clinicians to accurately implement these recommendations in various regions of the globe has a significant impact on their ability to provide evidence-based care.

Utilization of Immunosuppression

Between August and November of 2021, nephrologists in low- and middle-income countries in Asia, Africa, and Eastern Europe participated in an online survey. An email with a link to complete the survey was sent to participants on their own accord via established mailing lists and advertisements on social media. The survey was conducted using Google Forms and received

approval from the George Institute for Global Health India's Ethics Committee. The respondents' characteristics were described using descriptive statistics. Mean SD (range) was the way we referred to normally distributed continuous variables, medians with interquartile ranges for non-normally distributed variables, and proportions for categorical data. We examined the data for Asia and Africa separately because the majority of responses came from these continents. We used Graph Pad Prism 9 for all analyses. 85 percent of these specialists carried out kidney biopsy. In more than half of patients with suspected glomerular disease, approximately 61% of respondents were unable to obtain a kidney biopsy. Only light microscopy was available to roughly 43% of respondents from Africa. Overall, more people in Africa than Asia were unable to fully evaluate a biopsy or conduct ancillary investigations. Generally speaking, 59% of members announced that over 75% of their patients meet the expense of conclusion and treatment by personal installments. Exact utilization of immunosuppression was higher in Africa than in Asia. Delay in presentation, inadequate diagnostic workup, and high treatment costs were the primary obstacles to diagnosis and treatment. On a scale from 0 (no difficulty at all) to 5, respondents were asked to rate the difficulty of obtaining common serological assays that aid in the diagnosis, classification, and treatment of glomerular diseases. These assays include antinuclear antibody, antineutrophil cytoplasmic antibody, anti-glomerular basement membrane antibody, and anti-M-type phospholipase A2 receptor antibody. Challenges and identifies barriers to accessing evidence-based glomerular disease diagnosis and treatment in low-resource settings. Patients can't get care quickly, they can't make a diagnosis with a biopsy and other ancillary tests, they can't get access to treatment, and it costs a lot to get care.

Accurate Glomerular Disease Diagnosis and Classification

One third of respondents to this survey stated that less than half of patients in their care who were suspected to have a glomerular disease were able to receive a biopsy. This is the starting point in the process of providing evidence-based care to patients with glomerular diseases, with a few rare exceptions.

Essentially, more than half of the overview members announced moderate-to-serious trouble in getting to serology testing to support diagnosing glomerular sickness. Respondents from Africa encountered limitations in both of these areas significantly more frequently. For accurate glomerular disease diagnosis and classification, kidney biopsy tissue almost always needs to be processed by IF in addition to light microscopy. One third of survey participants, or about one sixth, did not have access to these two methods. Because of this limitation, glomerular disease will probably be classified incorrectly and the wrong treatment, including immunosuppressive therapy, will be chosen, both of which could be harmful. Even more restricted access to electron microscopy was not surprising. Hereditary nephritis especially basement membranous disease and immune-complex mediated diseases like cryoglobulinemic, fibrillary, or immunotactoid glomerulonephritis can only be accurately diagnosed with this method in 20% to 40% of kidney

biopsies. Finally, we discovered that a significant number of patients are forced to pay for their own treatment of glomerular diseases. Strangely, all regions had the same percentage of patients who had to pay out of pocket. As a result of general neglect, glomerular disease treatment was not included in universal health insurance plans. Appropriate, based on guidelines, methods for diagnosing and treating glomerular diseases, including prompt reporting of kidney biopsy results and the use of ancillary tests, are still reserved for a select few. It is essential to address the difficulties in diagnosing and treating glomerular diseases, which account for a significant portion of the potentially reversible causes of kidney failure, in order to advance kidney care worldwide, particularly in low-resource regions. In order to strengthen the healthcare system and ensure that these neglected diseases receive the appropriate attention, international cooperation and ongoing advocacy are required.