## Primary Renal Disease that Primary Care Physicians Should Know About

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The underlying cause of most glomerular diseases remains a puzzle, although important discoveries have been made in the past decades. Infectious agents, autoimmunity, drugs, inherited disorders, and environmental agents have been implicated as causes of certain glomerular diseases.

Glomerular diseases may be categorized into those that primarily involve the kidney (primary glomerular diseases), and those in which kidney involvement is part of a systemic disorder (secondary glomerular diseases). This lecture focuses on primary glomerular diseases. The separation of glomerular diseases into primary and secondary is somewhat problematic, because in some instances what are considered primary glomerular diseases are similar, if not identical, to secondary glomerular diseases. For example, IgA nephropathy, pauci-immune necrotizing and crescentic glomerulonephritis, antiglomerular basement membrane (anti-GBM) glomerulonephritis, membranous glomerulopathy, and type I membranoproliferative glomerulonephritis can occur as primary renal diseases or as components of the systemic diseases Henoch-Schönlein purpura, pauci-immune small vessel vasculitis, Goodpasture's syndrome, systemic lupus erythematosus, and cryoglobulinemic vasculitis, respectively.

When a patient has glomerular disease, the clinician not only must evaluate the clinical signs and symptoms, but also must be vigilant for evidence of a systemic process or disease that could be causing the renal disease. Clinical evaluation includes assessment of proteinuria, hematuria, the presence or absence of renal insufficiency, and the presence or absence of hypertension. Some glomerular diseases cause isolated proteinuria or isolated hematuria with no other signs or symptoms of disease. More severe glomerular disease often results in nephrotic syndrome or nephritic (glomerulonephritic) syndrome. Glomerular disease may have an indolent course or begin abruptly, leading to acute or rapidly progressive glomerulonephritis. Although some glomerular disorders consistently cause a specific syndrome (e.g., minimal change glomerulopathy results in nephrotic syndrome), most disorders are capable of causing features of both nephrosis and nephritis. This sharing and variability of clinical manifestations among different glomerular diseases confounds determination of an accurate diagnosis based on clinical features alone. Therefore, renal biopsy has an important role to play in the evaluation of glomerular disease in many patients and remains the gold standard.

This lecture will focus on the clinical syndromes caused by glomerular diseases, including isolated proteinuria, isolated hematuria, and specific forms of primary glomerular disease that cause nephrotic or nephritic syndrome.