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Understanding Lupus Nephritis: Symptoms, Diagnosis and Treatment

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Introduction

Lupus nephritis is a serious complication of systemic lupus erythematosus an autoimmune disease that can affect multiple organs and systems in the body. Lupus nephritis specifically involves inflammation of the kidneys, leading to impaired kidney function and potential kidney damage. Understanding the symptoms, diagnosis, and treatment of lupus nephritis is crucial for early detection and management of this complex condition. Lupus nephritis occurs when the immune system, which normally protects the body from infections and foreign invaders, mistakenly attacks the kidneys' own tissues. In individuals with SLE, autoantibodies and immune complexes accumulate in the kidneys, triggering inflammation and tissue damage.

Description

Lupus nephritis can affect the kidneys in various ways, ranging from mild inflammation of the kidney tissue (glomerulonephritis) to more severe forms of kidney damage, including scarring (fibrosis) and impaired kidney function. Left untreated, lupus nephritis can progress to end-stage kidney disease, necessitating dialysis or kidney transplantation. While lupus nephritis can occur in individuals with any form of SLE, certain factors increase the risk of kidney involvement, including younger age at lupus diagnosis, African American or Hispanic ethnicity, male gender, and specific genetic and environmental factors. Additionally, uncontrolled lupus activity, high levels of autoantibodies, and certain genetic variants are associated with an increased risk of lupus nephritis development and progression. Swelling (edema) in the legs, ankles, feet, or around the eyes due to impaired kidney function and fluid retention. Excessive foaming or frothing of urine, which may indicate the presence of protein (albumin) in the urine, a sign of kidney damage. Hypertension, especially if difficult to control with medication, may indicate kidney involvement. Changes in urination patterns, such as increased frequency, especially at night (nocturia), or decreased urine output [1,2].

Feeling unusually tired or lethargic, often due to anemia resulting from reduced production of red blood cells by the kidneys. Healthcare providers evaluate the patient's medical history, including symptoms suggestive of kidney involvement, and perform a physical examination to assess for signs such as swelling and hypertension. Blood and urine tests are conducted to assess kidney function, detect protein and blood in the urine (proteinuria and hematuria), and measure levels of autoantibodies and inflammatory markers associated with lupus activity. Imaging tests such as ultrasound, CT scan, or MRI may be performed to evaluate the structure and function of the kidneys and identify any abnormalities or signs of kidney damage. A kidney biopsy is often recommended to confirm the diagnosis of lupus nephritis, assess the severity and type of kidney involvement, and guide treatment decisions. During a kidney biopsy, a small sample of kidney tissue is obtained for microscopic examination to determine the extent of inflammation, scarring, and other changes characteristic of lupus nephritis. The primary treatment for lupus nephritis involves immunosuppressive medications to suppress the abnormal immune response and reduce inflammation in the kidneys. Commonly used immunosuppressants include corticosteroids, such as prednisone, and other medications such as cyclophosphamide, mycophenolate mofetil, and azathioprine [3].

Controlling high blood pressure is essential in managing lupus nephritis and preventing further kidney damage. Antihypertensive medications, such as angiotensin-converting enzyme inhibitors or angiotensin II receptor blockers are often prescribed to lower blood pressure and protect the kidneys from further injury. Adopting a healthy lifestyle, including maintaining a balanced diet, regular exercise, avoiding smoking, and limiting alcohol consumption, can help manage lupus nephritis and promote overall well-being. Individuals with lupus nephritis require regular medical monitoring to assess kidney function, monitor disease activity, and adjust treatment as needed. Monitoring typically involves frequent blood and urine tests, blood pressure measurements, and periodic kidney function assessments. In severe cases of lupus nephritis where kidney function is severely impaired and unresponsive to medical therapy, kidney transplantation may be considered as a treatment option. Kidney transplantation offers the potential for improved kidney function and quality of life in eligible candidates. Laboratory tests play a crucial role in diagnosing and monitoring lupus nephritis, a complication of systemic lupus erythematosus (SLE). These tests help healthcare providers assess kidney function, detect abnormalities in the urine, and measure markers of inflammation and autoimmune activity associated with lupus. Serum creatinine levels are measured to assess kidney function. Elevated creatinine levels indicate impaired kidney function, as the kidneys are less effective at filtering waste products from the bloodstream. Urinalysis is performed to detect protein in the urine, a hallmark sign of kidney damage [4].

Increased levels of proteinuria suggest leakage of protein from the kidneys into the urine, indicating glomerular injury. Hematuria refers to the presence of blood in the urine, which can be microscopic (only visible under a microscope) or macroscopic (visible to the naked eye). Hematuria may indicate inflammation or damage to the kidney's blood vessels or filtering units (glomeruli). ANA testing is used to detect the presence of autoantibodies targeting components of the cell nucleus. ANA positivity is a hallmark feature of SLE and is associated with increased risk of lupus nephritis. Anti-double-stranded DNA (anti-dsDNA) antibodies are specific to SLE and are often elevated in individuals with active lupus nephritis. High levels of anti-dsDNA antibodies correlate with disease activity and severity of kidney involvement. Anti-Smith antibodies are highly specific to SLE and are associated with lupus nephritis, particularly in individuals with more severe disease manifestations. Complement proteins, such as C3 and C4, play a role in the immune response and are often decreased in individuals with active SLE and lupus nephritis. Low complement levels may indicate disease activity and inflammation. While not a laboratory test in the traditional sense, a kidney biopsy is a diagnostic procedure used to obtain a small sample of kidney tissue for microscopic examination. Kidney biopsy provides valuable information about the severity and type of kidney involvement in lupus nephritis, guiding treatment decisions and prognosis [5].

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Conclusion

Laboratory tests play a pivotal role in the diagnosis, monitoring, and management of lupus nephritis. By assessing kidney function, detecting abnormalities in the urine, and measuring markers of inflammation and autoimmune activity, healthcare providers can evaluate disease activity, guide treatment decisions, and monitor response to therapy. Early detection and proactive management of lupus nephritis are essential for preserving kidney function and improving long-term outcomes in individuals with systemic lupus erythematosus.

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Conflict of Interest

There are no conflicts of interest by author.

References

1. Barber, Megan RW, Cristina Drenkard, Titilola Falasinnu and Alberta Hoi, et al. "Global epidemiology of systemic lupus erythematosus." *Nat Rev Rheumatol* 17 (2021): 515-532.
2. Wong, Maida, and Betty P. Tsao. "Current topics in human SLE genetics." *Springer Semin Immunopathol* 28 (2006): 97-107.
3. Foster, Mary H. "T cells and B cells in lupus nephritis." *Semin Nephrol* 27 (2007): 47-58.
4. Dai, Lu, M. Debowska, T. Lukaszuk and Leon Bobrowski, et al. "Phenotypic features of vascular calcification in chronic kidney disease." *J Int Med* 287 (2020): 422-434.
5. Furie, Richard, Brad H. Rovin, Frédéric Houssiau and Ana Malvar, et al. "Two-year, randomized, controlled trial of belimumab in lupus nephritis." *New Eng J Med* 383 (2020): 1117-1128.

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