
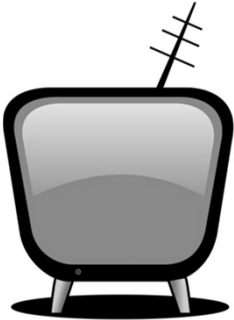




LUPUS AND THE KIDNEYS

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OBJECTIVES

- Discuss how lupus effects kidneys in pediatric patients
- Describe complications of lupus to the function of the kidney
- Describe considerations for lupus disease activity in the kidneys



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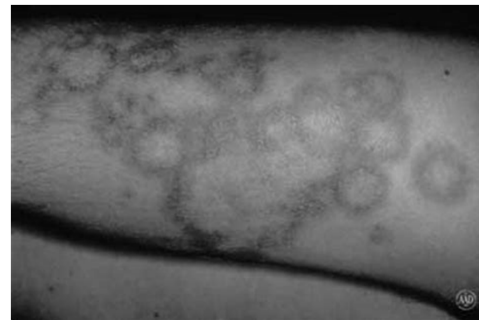
WHAT IS LUPUS?

- Lupus is a chronic autoimmune disease where the immune system produces antibodies programmed to attack self tissues instead of normal immune function. Short for Systemic Lupus Erythematosus
- Characteristics may include;
 - Blood clotting or bleeding, skin rashes, alopecia, renal disease, arthritis, cardiac disease, lung disease, neurologic disease
 - ANY or ALL
- Types; Systemic, cutaneous, DILE, neonatal



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EXAMPLES OF DISCOID RASH



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MALAR RASH






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ARTHRITIS







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ALOPECIA



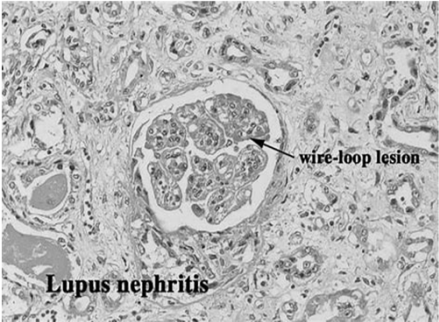



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ORGANS






Lupus nephritis

wire-loop lesion

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LET’S TALK LUPUS AND THE KIDNEY

- Approximately 1/3 up to 60% of lupus patients suffer with lupus nephritis
- WHO classified lupus nephritis in 1974
- The percutaneous kidney biopsy is the gold standard in diagnosing LN
 - Ongoing work is being done to further the molecular evaluation to develop better descriptions and further efforts to personalized therapies for LN
- Elevated serum creatinine or other renal symptom requires further eval
 - Not everything is actually lupus related
 - Infections
 - Thrombotic
 - Renal injury due to other disease (HTN/DM)




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WHO Classification of Lupus Nephritis

CLASS I	Minimal Mesangial Glomerulonephritis - histologically normal on light microscopy but with mesangial deposits on electron microscopy
CLASS II	Mesangial Proliferative Lupus Nephritis - typically responds completely to treatment with corticosteroids
CLASS III	Focal Proliferative Nephritis - often successfully responds to treatment with high doses of corticosteroids
CLASS IV	Diffuse Proliferative Nephritis - mainly treated with corticosteroids and immunosuppressant drugs
CLASS V	Membranous Nephritis - characterized by extreme edema and protein loss
CLASS VI	Glomerulosclerosis



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WHAT DO OUR PATIENTS REPORT?

- Fatigue
- Fever
- Rash, mouth sores
- Chest pain
- CNS changes
 - Confusion, seizure
- Headache, dizziness
- Nausea/vomiting
- Edema



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EXAM AND LAB FINDINGS

- | | |
|---|---|
| <ul style="list-style-type: none"> • Rash • Oral/nasal ulcers • Synovitis/arthritis • Serositis • HTN • Peripheral edema • Cardiac decompensation • Ascites | <ul style="list-style-type: none"> • BUN and creatinine • Hematuria • Proteinuria • Anti DsDNA • ESR, CRP • C3 and C4 |
|---|---|



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THE COMPLICATION TO THE KIDNEY

- Alters renal function=Filter is not filtering
 - Sometimes we need dialysis
- Hypertension
 - Treat aggressively
- Sclerosing
- Corticosteroid therapy is aggressive and then therapy focuses on reducing steroids and maintaining disease



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OTHER TREATMENT CONSIDERATIONS

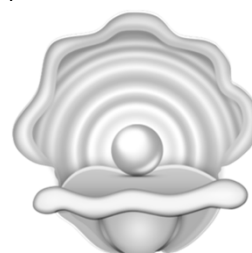
- Need to supplement calcium to prevent osteoporosis
- May need to restrict protein in diet
- May need to restrict fat in diet and treat high lipids
- May induce diabetes with the corticosteroids so monitor
- Always weigh your risk vs benefit (complications, side effects)
- Remember the kidneys are not going to be the only thing affected by the disease
- ALWAYS BE MINDFUL OF EVOLUTION OF AI DISEASE



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CLINICAL PEARLS

- Re-biopsy may be needed at any time
- Remission, flare, and compliance or lack thereof are always on the radar
- Cure is not a reality yet
- Multifaceted disease
 - Attack can come from ischemic insult to actual antibody attack to membrane and sclerosing
- Partner, partner, partner



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REFERENCES



- Anders, H.-J., & Weening, J. J. (2013). Kidney disease in lupus is not always 'lupus nephritis'. *Arthritis Research & Therapy*, 15:108.
- John G. Hanly, Aidan G. O'Keefe, Li Su, Murray B. Urowitz, Juanita Romero-Diaz, Caroline Gordon, Sang-Cheol Bae, Sasha Bernatsky, Ann E. Clarke, Daniel J. Wallace, Joan T. Merrill, David A. Isenberg, Anisur Rahman, Ellen M. Ginzler, Paul Fortin, Dafna D. Gladman, Jorge Sanchez-Guerrero, Michelle Petri, Ian N. Bruce, Mary Anne Dooley, Rosalind Ramsey-Goldman, Cynthia Aranow, Graciela S. Alarcón, Barri J. Fessler, Kristjan Steinsson, Ola Nived, Gunnar K. Sturfelt, Susan Manzi, Munther A. Khemashta, Ronald F. van Vollenhoven, Asad A. Zoma, Manuel Ramos-Casals, Guillermo Ruiz-Irastorza, S. Sam Lim, Thomas Stoll, Murat Incanc, Kenneth C. Kalunian, Diane L. Kamen, Peter Maddison, Christine A. Peschken, Søren Jacobsen, Anca Askanase, Chris Theriault, Kara Thompson, Vernon Farewell, The frequency and outcome of lupus nephritis: results from an international inception cohort study, *Rheumatology*, Volume 55, Issue 2, February 2016, Pages 252-262, <https://doi.org/10.1093/rheumatology/kev311>
- Jorge A. Wallace ZS, Lu N, Zhang Y, Choi HK. Renal Transplantation and Survival Among Patients With Lupus Nephritis: A Cohort Study. *Ann Intern Med*. [Epub ahead of print 22 January 2019]170:240-247. doi: 10.7326/M18-1570
- Liu Z, Zhang H, Liu Z, Xing C, Fu P, Ni Z, et al. Multitarget Therapy for Induction Treatment of Lupus Nephritis: A Randomized Trial. *Ann Intern Med*. 2015;162:18-26. doi: 10.7326/M14-1030.
- Schwartz, N., Gollay, B., & Putterman, C. (2014, September). The pathogenesis, diagnosis, and treatment of lupus nephritis. *Current Opinion in Rheumatology*, 26(5), 502-509.
- Bose, Bhadrar et al.; Ten Common Mistakes in the Management of Lupus Nephritis; *American Journal of Kidney Diseases*, Volume 63, Issue 4, 667 - 676
- Thurman, J. (2015, January). Complement in Kidney Disease: Core Curriculum 2015. *American Journal of Kidney Diseases*, 65(1), 156-168.

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