LUPUS AND THE KIDNEYS

Angela Berg DNP, APRN, CPNP
Cure 4 The Kids Foundation Clinics

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
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

EXAMPLES OF DISCOID RASH

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MALAR RASH

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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)

WHO Classification of Lupus Nephritis

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

EXAM AND LAB FINDINGS

• Rash
• Oral/nasal ulcers
• Synovitis/arthritis
• Serositis
• HTN
• Peripheral edema
• Cardiac decompensation
• Ascites

• BUN and creatinine
• Hematuria
• Proteinuria
• Anti DsDNA
• ESR, CRP
• C3 and C4
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

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

REFERENCES

• Bose, Bhadran et al.; Ten Common Mistakes in the Management of Lupus Nephritis; American Journal of Kidney Diseases, Volume 63, Issue 4, 667 - 676
ANGELA BERG, DNP, APRN, CPNP
CURE 4 THE KIDS FOUNDATION CLINICS

ABERG@CURE4THEKIDS.ORG