Systemic Lupus Erythematosus:

Clinical Manifestations and Classification in Adults and Children

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Conflicts of Interest and Disclosures

I **do** intend to discuss an unapproved/investigative use of a commercial product/device in my presentation/.

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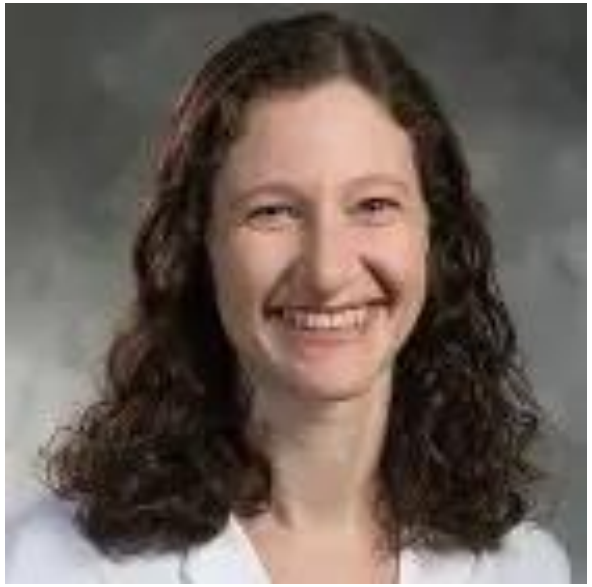
Overview and Agenda

Three speakers who uniquely see both children and adults with SLE

Clinical/Laboratory Manifestations



Pathobiology

Outcome Measures
Disease Trajectory

Claims

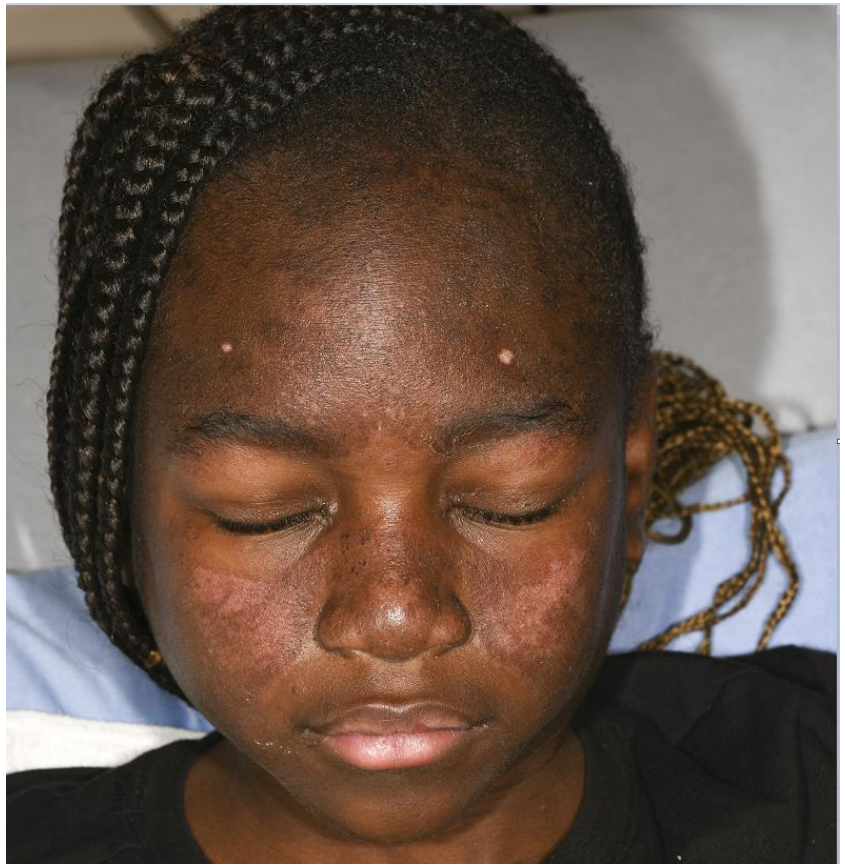
1) SLE is the same fundamental disease that can present in childhood or during adulthood, *with limited data* in very young children (~ <5 years) with monogenic disease.

2) There is complete overlap in disease manifestations, though *disease activity and certain organ involvement* is higher in children

3) The same classification criteria and disease activity measures are used in children and adults for the purposes of drug development

Clinical Manifestations

- Cutaneous manifestations: Acute Cutaneous Lupus



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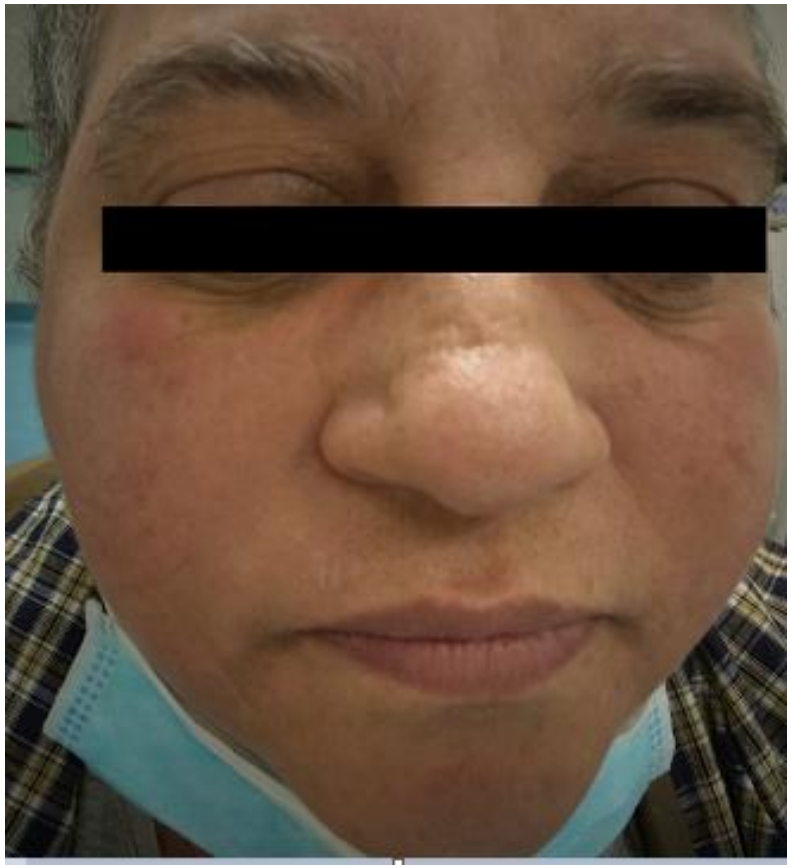

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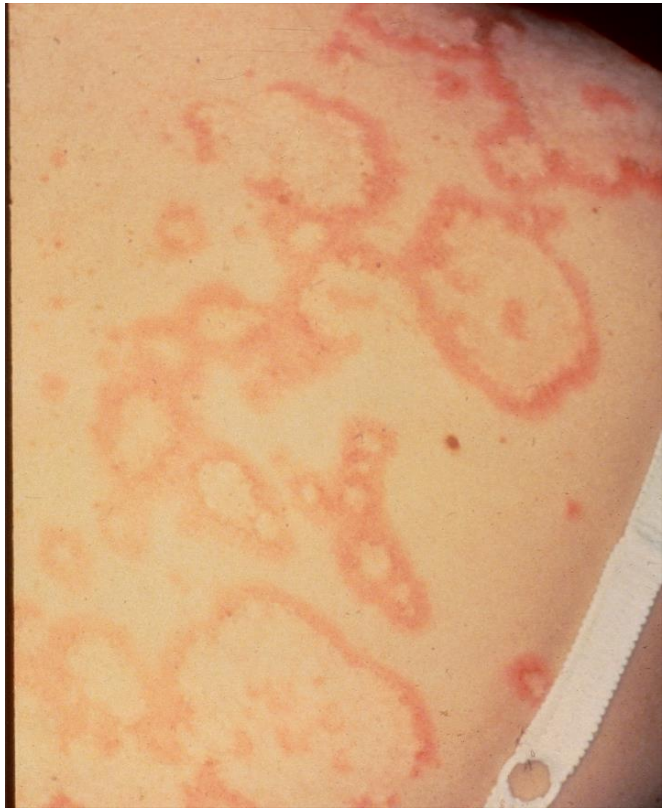
Clinical Manifestations

Subacute Cutaneous Lupus



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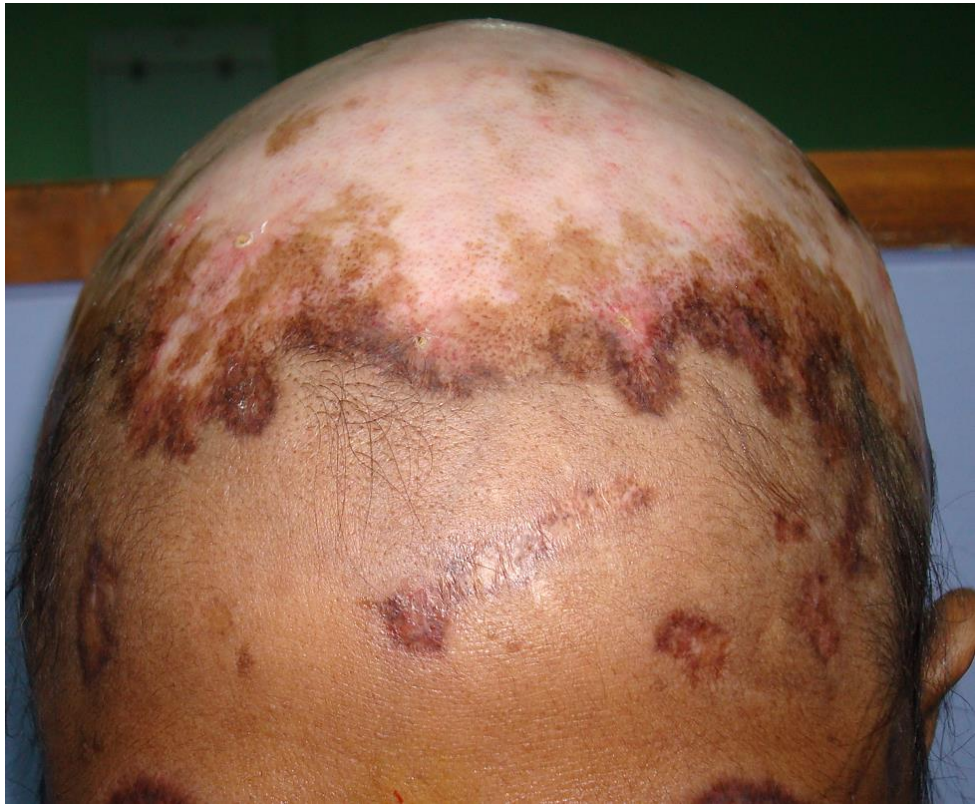
Chronic Cutaneous Lupus



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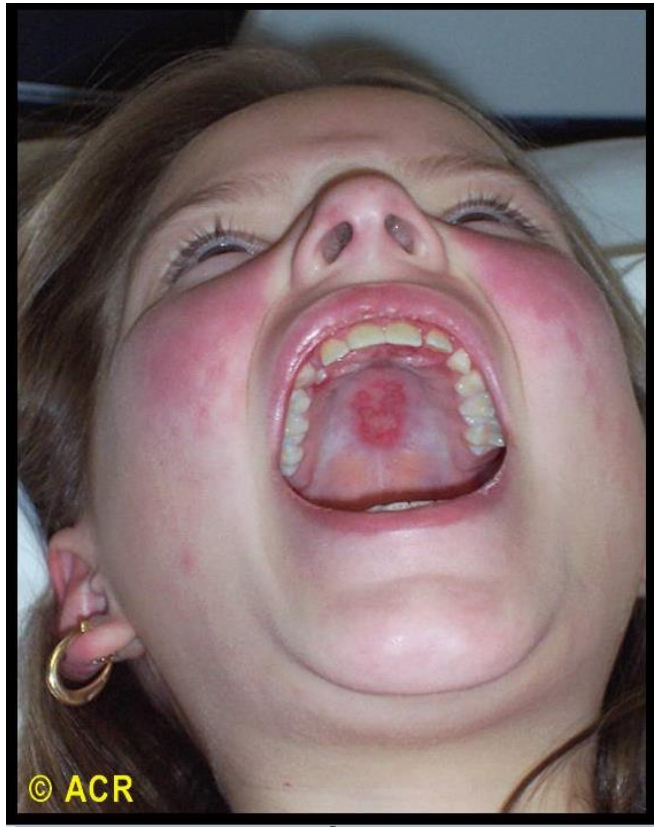
Oral and Nasal Ulcers



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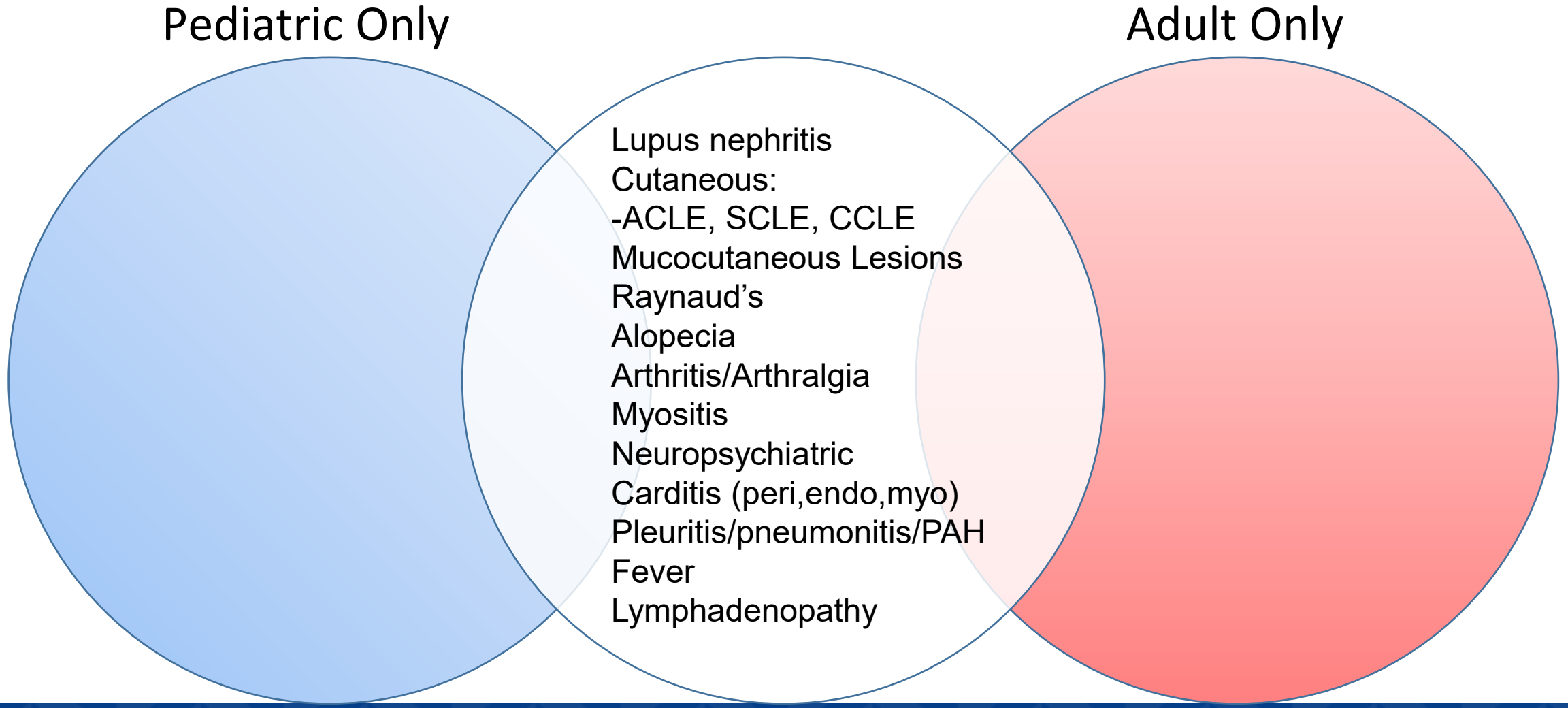
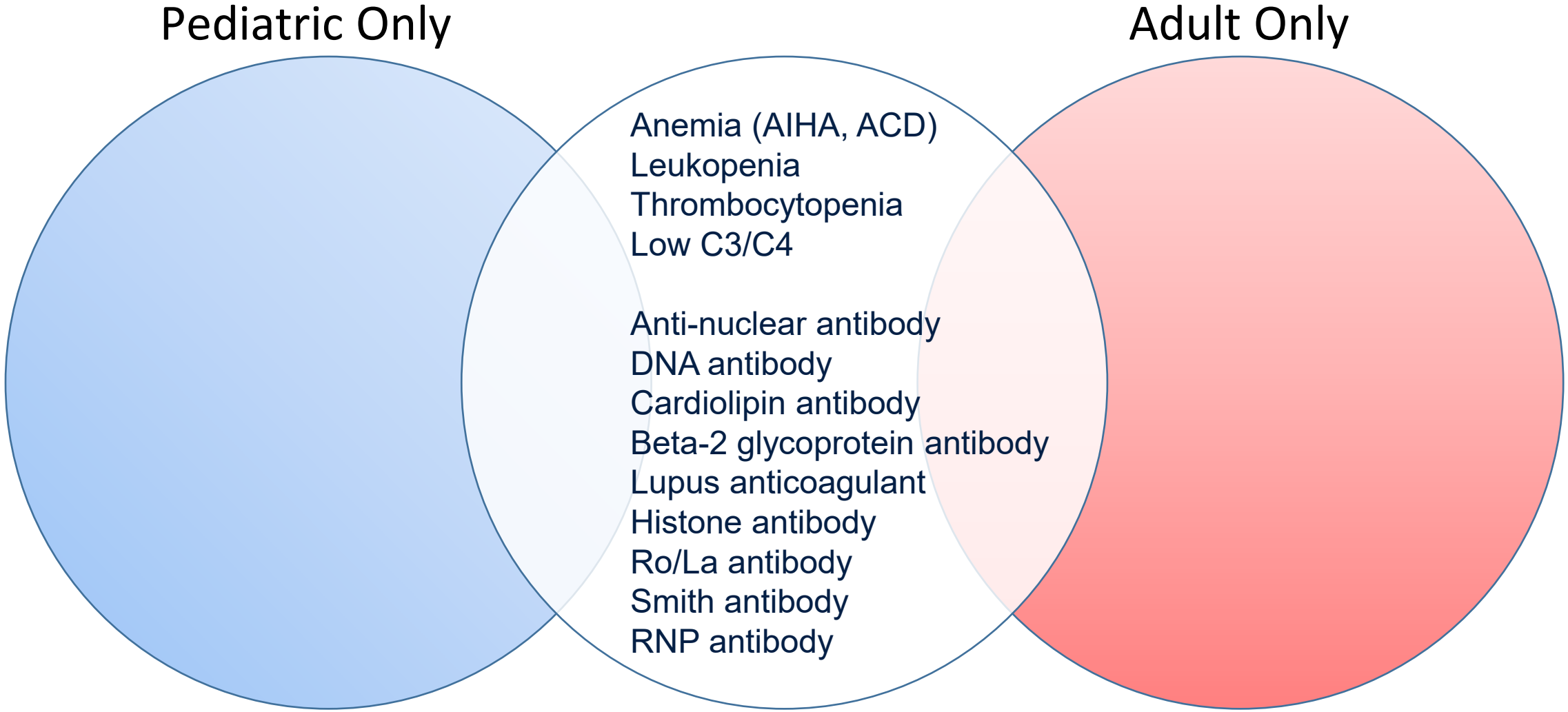
Clinical Manifestations of SLE



Laboratory Manifestations of SLE



Phenotypic Differences: Severity

- Children more likely to have:[1-3]
  - **Higher SLEDAI at diagnosis**
  - **Renal involvement (OR 2.08)**
  - **DNA antibody positive (OR 1.97)**
  - Malar rash (OR 1.64)
  - Mucocutaneous involvement (OR 1.22)
  - **Neurologic involvement (OR 1.52); seizures (OR 1.92)**
  - Anemia/thrombocytopenia/leukopenia (OR: 1.41-1.91)
  - Cutaneous vasculitis (OR 1.72)
- Children less likely to have:[1-2]
  - Arthritis (OR 0.63)
  - Pulmonary involvement (OR 0.54)
  - Pleuritic (OR 0.61)

1..Livingston. Semin Arthritis Rheum. 2012 Dec;42(3):271-80.
2. Xiaolan et al. *Int Arch Allergy Immunol* 6 January 2022; 183 (1): 116–126
3. Brunner, et al. Arthritis & Rheumatism, 2008. 58: 556-562.

Phenotypic Differences: Impact on Drug Development

- Children often receive more aggressive treatment
  - Activity = damage

    Caveat: Treatment patterns impacted by provider bias, patient/family preferences, and disease comorbidities. Less disease tolerance in children
- Drug targets expected to be similar
  - Immune system maturation occurs early
  - *Similarity in exposure-response and drug receptors will be covered in Session 2*

Phenotypic Differences ≠ Different Disease

The NEW ENGLAND JOURNAL of MEDICINE

A Comparison of Childhood and Adult Type I Diabetes Mellitus

Authors: Jukka Karjalainen, M.D., Pasi Salmela, M.D., Jorma Ilonen, M.D., Heljä-Marja Surcel, M.SC., and Mikael Knip, M.D. Author Info & Affiliations

Published April 6, 1989 | N Engl J Med 1989;320:881-886 | DOI: 10.1056/NEJM198904063201401

Special Case of Monogenic Lupus

- Presents early in life (usually <5 years); severe disease manifestations
  - Similar cardinal features, most commonly: mucocutaneous (84%), arthritis/myositis (74%), neurologic (headache, seizure, spasticity [42%], lupus nephritis (30%), serositis (17%)

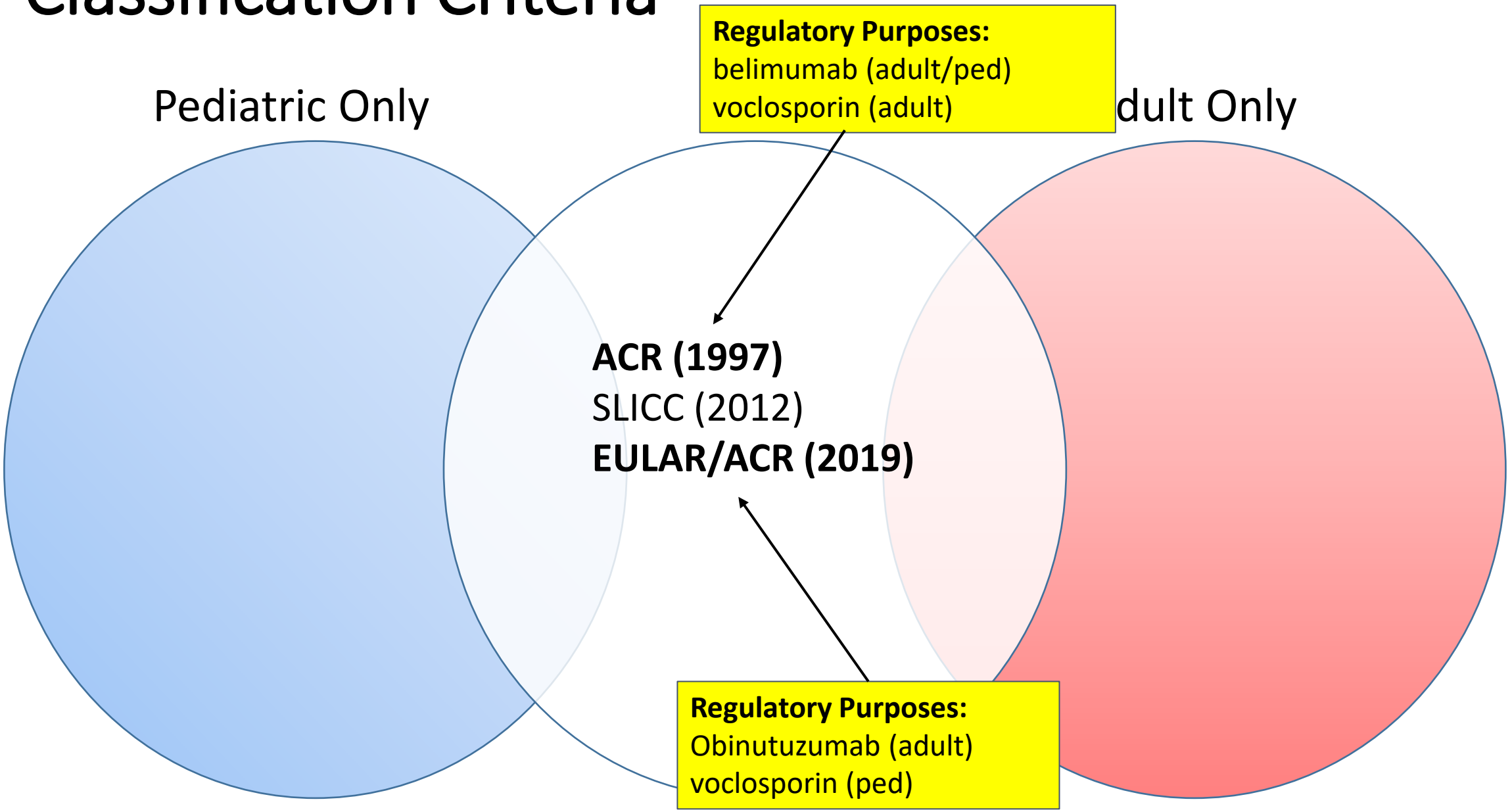
To be discussed in detail in Session 3

Al-Mayouf et al. *Lupus Science & Medicine*. 2026;13:e001918.

Classification Criteria

- Used to develop a homogeneous group of patients for research studies
  - i.e. regulatory drug studies

Classification Criteria



Classification Criteria in Adults Performs Well in Children

- Sensitivity[1-3]
  - ACR (1997): 65.8-92.4%
  - SLICC: 94.5-96.3%
  - ACR/EULAR: 93.7-96%
- Specificity[1-3]
  - ACR (1997): 89.4-98.3%
  - SLICC: 81.7-91.5%
  - ACR/EULAR: 86.5-94.9%

Highlights the overlap in clinical and laboratory manifestations and similarity of the types of patients who would be enrolled in clinical trials

1. Tao et al. J Rheumatol. 2019 Jul;46(7):731-738
2. Aslan et al. Lupus. 2025 Apr;34(5):511-518.
3. Qiao et al.J Rheumatol Jun 2026, 53 (6) 679-685

Conclusion

1) SLE is the same fundamental disease that can present in childhood or during adulthood, *with limited data* in very young children (~ <5 years) with monogenic disease.

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Thank you!


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