Belimumab and Voclosporin for Lupus Nephritis: Effectiveness and Value

Public Meeting — March 26, 2021

Meeting materials available at: https://icer.org/assessment/lupus-nephritis-2021/
Patient and Clinical Experts

Kathleen Arntsen, BA, President & CEO, Lupus and Allied Diseases Association, Inc.
• *LADA receives funding from health care related organizations, including Aurinia and GSK, but members associated with LADA are not compensated.*

Christele Felix, BS, Chief Operating Officer, LupusChat
• *No financial conflicts of interest to disclose.*

Meggan Mackay, MD, MS, Investigator and Professor of Medicine, The Feinstein Institutes for Medical Research, Northwell Health
• *Dr. Mackay participates in industry-sponsored clinical trials for lupus nephritis and is reimbursed for subjects recruited and followed.*

Brad Rovin, MD, Professor of Medicine and Pathology, Ohio State University Wexner Medical Center
• *Dr. Rovin is involved in several trials of novel therapeutics for lupus nephritis and is a consultant on the medical/scientific advisory boards to design trials for these therapeutics. His organization receives less than 25% funding from pharmaceutical companies for clinical trials.*
“People should know that lupus is never the same for everyone. Lupus is insidious; its thievery is endless. The effects to my daily life are profound from lupus. I no longer teach. I no longer have the physical ability to do the things that I used to. I have lists to remember things and multiple calendars. If I overdo it one day, I pay for it for three. I have learned to do things in pieces, pacing is key.”

Tricia J., Lupus Patient
Why Are We Here Today?

• What happens the day these treatments are approved by the FDA?

• Patients can have difficulty accessing drugs
  • Coverage eligibility
  • Costs (out-of-pocket and insurance premiums)

• What happens to patients and others in the health care “system”? 
When There Isn’t Enough Money For Health Insurance

Leonard Edloe, Richmond, Virginia
The Whitmans, Bird City, Alaska
Luke Breen, Minneapolis, Minnesota
Organizational Overview

• New England Comparative Effectiveness Public Advisory Council

• The Institute for Clinical and Economic Review (ICER)
Sources of Funding, 2021

https://icer.org/who-we-are/independent-funding/

Nonprofit Foundations 68%

Government 10%

Manufacturer Contributions 12%

Health Plans and Provider Group Contributions 9%

Other* 1%

ICER Policy Summit and non-report activities only

*Individual / matching contributions and speech stipends
How was the ICER report developed?

• Scoping with guidance from patient groups, clinical experts, manufacturers, and other stakeholders

• Internal ICER staff evidence analysis

• The University of Sheffield, School of Health and Related Research (ScHARR) cost-effectiveness modeling

• Public comment and revision

• Expert reviewers
  • Kathleen Arntsen, BA, President and CEO, Lupus and Allied Diseases Association, Inc.
  • Michael Ward, MD, MPH, Chief, Clinical Trials and Outcomes Branch, National Institute of Arthritis and Musculoskeletal and Skin Diseases

• How is the evidence report structured to support CEPAC voting and policy discussion?
Value Assessment Framework: Long-Term Value for Money

- Special Social/Ethical Priorities
- Benefits Beyond “Health”
- Total Cost Overall
  Including Cost Offsets
- Health Benefits:
  Return of Function, Fewer Side Effects
- Health Benefits:
  Longer Life
Cost-Effectiveness 101

Health Maximization
Threshold Range

Effectiveness (Better Health)

Cost ($)

Even more effective
Higher cost

More effective
Higher cost
Integrating Elements of Long-Term Value for Money

- Consider Range of Pricing Linked to Better Health
- Consider Benefits Beyond Health and Special Priorities

Maximum Price at Which We Can Create More Health Than Harm

Price to reach $50k/QALY or evLYG

Price to reach $100k/QALY or evLYG

Price to reach $150k/QALY or evLYG

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## Agenda

<table>
<thead>
<tr>
<th>Time (ET)</th>
<th>Activity</th>
</tr>
</thead>
</table>
| 10:00 am—10:20 am| Meeting Convened and Opening Remarks  
*Steven D. Pearson, MD, MSc, ICER*                                               |
| 10:20 am—10:40 am| Presentation of the Clinical Evidence  
*Jeffrey A. Tice, MD, University of California, San Francisco* |
| 10:40 am—11:10 am| Presentation of the Economic Model  
*Olena Mandrik, PhD, MSc, The University of Sheffield* |
| 11:10 am—11:40 am| Public Comments and Discussion                                                            |
| 11:40 am—12:20 pm| Lunch                                                                                       |
| 12:20 pm—1:25 pm| New England CEPAC Deliberation and Vote                                                     |
| 1:25 pm—1:45 pm  | Break                                                                                       |
| 1:45 pm—3:00 pm  | Policy Roundtable                                                                            |
| 3:00 pm—3:30 pm  | Reflections from New England CEPAC and Closing Remarks                                       |
| 3:30 pm          | Meeting Adjourned                                                                            |
Presentation of the Clinical Evidence

Jeffrey A. Tice, MD
Division of General Internal Medicine
University of California San Francisco
Key Collaborators

• Serina Herron-Smith, BA, Research Assistant, ICER

• Belen Herce-Hagiwara, BA, Research Assistant, ICER

Disclosures:

We have no conflicts of interest relevant to this report
Background

• Systemic Lupus Erythematosus (SLE)
  • 300,000 to 1.5 million in US
  • 90% female

• Lupus nephritis (LN) in about 50%
  • Most common cause of death and disability in SLE
  • Typically presents between the ages of 20 and 40 years
  • Proteinuria (UPCR) followed by loss of kidney function (eGFR)
  • Blacks and Hispanics have more severe, progressive disease
Impact on Patients

- End stage renal disease (ESRD) requiring dialysis or kidney transplant, to avoid dying
- Side effects of treatments (steroids, immunosuppressive therapies)
- Fatigue
- Cost of treatment
- Child-bearing
- Work
Standard of Care and Management of LN

• Induction
  • High dose corticosteroids plus mycophenolate mofetil (MMF) or cyclophosphamide

• Maintenance
  • MMF

• < 50% achieve sustained remission

• ESRD in 11% at 5 years and 17% at 10 years with current therapy
Belimumab (Benlysta)

- B-lymphocyte stimulator inhibitor
  - 10 mg/kg IV every 2 weeks x 3, then
  - 10 mg/kg IV every 4 weeks

- FDA approved for SLE 3/10/11, expanded to LN on 12/16/20
Voclosporin (Lupkynis)

• Calcineurin inhibitor
  • 23.7 mg by mouth twice daily

• FDA approval 1/22/21
Outcomes for Belimumab

• **Primary**
  - Primary efficacy renal response (PERR) at **two** years
    - $\text{UPCR} \leq 0.7 \text{ AND } \text{eGFR} \geq 60 \text{ mL/min/1.73 m}^2$

• **Secondary**
  - Complete renal response at two years
    - $\text{UPCR} \leq 0.5 \text{ AND } \text{eGFR} \text{ not more than 10\% below baseline}$

• No reported results on fatigue or other measures of quality of life
Outcomes for Voclosporin

• **Primary**
  - Complete response (CR) at one year
    - UCPR of $\leq 0.5$ AND eGFR $\geq 60$ mL/min/1.73 m$^2$

• **Secondary**
  - Partial response: $\geq 50\%$ decrease in UPCR

• No results on fatigue or other measures of quality of life
Insights from Discussions with Patients

- Must highlight the white / non-white disparities for patients with LN. For example, Black patients progress to ESRD at almost 9 times the rate of white patients.

- Each patient has a unique constellation of co-morbidities, demographics, living circumstances, and baseline medications

- Given the young age of onset of LN, the disease has a huge negative impact on patients’ ability to work, to have children, and to advance in their careers

- COVID impact: the need to travel to a medical center for an infusion represents an even greater burden
Clinical Evidence
# Key Clinical Trials

<table>
<thead>
<tr>
<th>Interventions</th>
<th>Trials</th>
<th>N</th>
<th>Baseline Characteristics Across Trials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belimumab</td>
<td>BLISS-LN</td>
<td>448</td>
<td>Mean age: 33 years&lt;br&gt;Sex: 88% female&lt;br&gt;Race: 50% Asian, 33% white, 14% Black</td>
</tr>
<tr>
<td>Voclosporin</td>
<td>AURA-LV AURORA</td>
<td>534</td>
<td>Mean age: 33 years&lt;br&gt;Sex: 87% female&lt;br&gt;Race: 38% Asian, 37% white, 8% Black</td>
</tr>
</tbody>
</table>
## Results: Complete Response at One and Two years

<table>
<thead>
<tr>
<th>Outcome</th>
<th>One Year</th>
<th>Two years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belimumab CRR§</td>
<td>32.5%</td>
<td>30.0%</td>
</tr>
<tr>
<td>Placebo CRR</td>
<td>25.5%</td>
<td>19.7%</td>
</tr>
<tr>
<td>Voclosporin CR*</td>
<td>42.3%</td>
<td>-</td>
</tr>
<tr>
<td>Placebo CR</td>
<td>23.3%</td>
<td>-</td>
</tr>
</tbody>
</table>

§ CRR: Complete renal response at one year estimated from Figure 1 in the manuscript.

* CR: Complete response from meta-analysis. Two-year data are not available.
### Harms in the Phase 3 Trials

<table>
<thead>
<tr>
<th>Intervention, Trial</th>
<th>Arms</th>
<th>N</th>
<th>SAEs</th>
<th>D/C due to AEs</th>
<th>Mortality</th>
<th>Serious Infections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voclosporin</td>
<td>Voclosporin</td>
<td>178</td>
<td>21%</td>
<td>11%</td>
<td>0.6%</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>Placebo</td>
<td>178</td>
<td>21%</td>
<td>15%</td>
<td>2.8%</td>
<td>11%</td>
</tr>
<tr>
<td>Belimumab</td>
<td>Belimumab</td>
<td>224</td>
<td>26%</td>
<td>13%</td>
<td>3%</td>
<td>14%</td>
</tr>
<tr>
<td></td>
<td>Placebo</td>
<td>224</td>
<td>30%</td>
<td>13%</td>
<td>2%</td>
<td>17%</td>
</tr>
</tbody>
</table>

Voclosporin carries a black box warning for serious infections and malignancies that may lead to hospitalization or death based on the experience with similar immunosuppressant therapies.
Controversies and Uncertainties

• How one-to-two-year renal response outcomes from the trials translate into long term outcomes such as ESRD, dialysis, and mortality

• How long to continue the therapies

• The impact of these therapies on fatigue and other measures of quality of life

• The impact of these therapies in non-White populations

• Whether voclosporin has less toxicity than other calcineurin inhibitors
Potential Other Benefits and Contextual Considerations

• LN typically impacts young adults and is the major cause of premature mortality for patients living with SLE

• Voclosporin is an oral drug

• LN disproportionately impacts non-white patients. Subgroup analyses suggest that both belimumab and voclosporin may be more effective in Black patients

• Belimumab may have other benefits beyond its impact on renal function
Public Comments Received

• Abstract ACR 2020: A higher proportion of patients receiving belimumab in the BLISS-LN trial achieved low SLE disease activity (SLEDAl-S2K score <4, 28% versus 19%)

• Belimumab is available in a sub-cutaneous formulation, which may supplant the IV formulation

• Voclosporin has a black box warning
Summary

• Belimumab significantly increases the CRR and PERR at two years compared with standard therapy alone without increases in adverse events. Two years is too short to provide high certainty of the magnitude or duration of long-term benefit.

• Voclosporin significantly increases the CR and PR at one year compared with standard therapy alone without increases in adverse events. One year is too short to provide high certainty of the magnitude or duration of long-term benefit.
## ICER Evidence Ratings for Belimumab and Voclosporin

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Comparator</th>
<th>Evidence Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adults with LN</strong></td>
<td><strong>Belimumab + MMF/Corticosteroids or Cyclophosphamide/Corticosteroids</strong></td>
<td><strong>B+</strong></td>
</tr>
<tr>
<td>MMF/Corticosteroids or Cyclophosphamide/Corticosteroids</td>
<td>MMF/Corticosteroids</td>
<td></td>
</tr>
<tr>
<td><strong>Voclosporin+ MMF/Corticosteroids</strong></td>
<td>MMF/Corticosteroids</td>
<td><strong>B+</strong></td>
</tr>
</tbody>
</table>

**B+: Moderate certainty that the intervention is incremental or better than the comparator**
Questions?
Belimumab and Voclosporin for Lupus Nephritis: Effectiveness and Value

Olena Mandrik, PhD, PharmD, MSc

Research Fellow

The University of Sheffield
Key Modeling Team Members

• **James Fotheringham, MD**, NIHR Clinician Scientist, Consultant Nephrologist, Sheffield Kidney Institute/University of Sheffield

• **Praveen Thokala, PhD**, Senior Research Fellow, University of Sheffield

**Disclosures:**

Financial support was provided to the University of Sheffield from the Institute for Clinical and Economic Review.

The University of Sheffield researchers have no conflicts to disclose.
Objective

Estimate the cost effectiveness of belimumab and voclosporin for patients with lupus nephritis, with each drug compared to the standard of care as represented by the comparator arm in its own pivotal trial(s)
Methods Overview

- **Model**: Short term trial-based Markov model and long-term extrapolation using partitioned-survival modeling
- **Setting**: United States
- **Perspective**: Health care sector perspective
- **Time Horizon**: Lifetime horizon
- **Discount Rate**: 3% per year (costs and outcomes)
- **Cycle Length**: 1 month
- **Primary Outcome**: Cost per quality-adjusted life year (QALY) gained; cost per life year (LY) gained, cost per equal value of life years gained (evLYGs)
Model Characteristics

• Target Population
  • Mean age – 36 years;
  • Females – 92%
  • Race/Ethnicity - Black: 53%, Others: 47%

• Model structure
  • Short-term model – 3 years
  • Long-term model – lifetime
Short-Term Model Based on Trial Data

Patients maintain their ‘end of follow up’ health state until the end of the short term model

*ESRD: end-stage renal disease
Key Model Assumptions: Short-Term Model

- Patients in Complete and Partial Response states discontinue treatment at the end of the short-term model (unless serious adverse event occurs)
- Patients in Active Disease state discontinue treatment at 18 months
- Tapered steroid use decreases costs and increases quality of life
## Key Model Inputs: Belimumab (BLISS-LN trial)

<table>
<thead>
<tr>
<th>Arm</th>
<th>Complete Renal Response, %</th>
<th>Partial Renal Response, %</th>
<th>End-Stage Renal Disease, %</th>
<th>Death, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belimumab</td>
<td>30.0</td>
<td>17.5</td>
<td>0.0</td>
<td>0.4</td>
</tr>
<tr>
<td>Placebo</td>
<td>19.7</td>
<td>17.0</td>
<td>0.4</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Efficacy at 104 weeks
### Key Model Inputs: Voclosporin (AURORA and AURA-LV Trials)

<table>
<thead>
<tr>
<th>Arm</th>
<th>Complete Renal Response*, %</th>
<th>Partial Renal Response**, %</th>
<th>ESRD***, %</th>
<th>Death¥, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voclosporin</td>
<td>43.2</td>
<td>26.6</td>
<td>0.0</td>
<td>0.6</td>
</tr>
<tr>
<td>Placebo</td>
<td>23.3</td>
<td>28.4</td>
<td>0.0</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Efficacy at 52 weeks

* Meta-analysis of AURA-LV and AURORA trials
** Calculated from Meta-analysis of AURA-LV and AURORA trials
*** Assumed as zero
¥ AURORA trial
Long-Term Model Schematic

Mean time to ESRD

Complete/Partial Response: 19.4 years
Active Disease: 13 years

Mean overall survival

Complete/Partial Response: 28.1 years
Active Disease: 23.7 years

Key Model Assumptions: Long-Term Model

• Patients in Active Disease, Complete and Partial Response at the end of the short-term model transition independent of the previous treatment received

• Patients in Complete and Partial Response are assumed to have the same overall and ESRD free survival

• Time in Active Disease before progressing to ESRD is 1.2 years (for patients in response states)
# Key Model Inputs: Treatment-Related Costs

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Monthly Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belimumab loading dose (1st month)</td>
<td>$9,811*</td>
</tr>
<tr>
<td>Belimumab</td>
<td>$3,560*</td>
</tr>
<tr>
<td>Voclosporin</td>
<td>$7,686**</td>
</tr>
</tbody>
</table>

* Estimated using average sales price; IV dose; average weight of patients in the US
** Estimated using mean weighted daily dose, price per wallet and assumed discount of 22.5%
# Key Model Inputs: Costs of Health States

<table>
<thead>
<tr>
<th>Health State</th>
<th>Annual Health Related Costs</th>
<th>Indirect (Non-Medical) Costs***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Response</td>
<td>$7,871*</td>
<td>$5,140</td>
</tr>
<tr>
<td>Partial Response</td>
<td>$8,185*</td>
<td>$5,140</td>
</tr>
<tr>
<td>Active Disease</td>
<td>$42,510 *</td>
<td>$14,777</td>
</tr>
<tr>
<td>End Stage Renal Disease</td>
<td>$120,920**</td>
<td>$24,157</td>
</tr>
</tbody>
</table>

Sources:
** Medicare (data provided by the Lupus Research Alliance)
*** Cloutier et al. (2020); Garris et al. (2013); Bureau of Labor Statistics (2020)
Key Model Inputs: Quality of life

<table>
<thead>
<tr>
<th>Health State</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Response</td>
<td>0.80</td>
</tr>
<tr>
<td>Partial Response</td>
<td>0.71</td>
</tr>
<tr>
<td>Active Disease</td>
<td>0.62</td>
</tr>
<tr>
<td>End Stage Renal Disease</td>
<td>0.55</td>
</tr>
</tbody>
</table>

Sources: Bexelius et al, 2013; Mohara et al, 2014

Increment in Quality of Life for Low-Dose Steroids: 0.025
Increment in Quality of Life for Treatments with No Steroids: 0.09
Results
## Base-Case Results: Belimumab

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Drug Cost</th>
<th>Total Cost</th>
<th>QALYs</th>
<th>Life Years</th>
<th>evLYGs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belimumab</td>
<td>$93,500</td>
<td>$930,000</td>
<td>11.7</td>
<td>17.9</td>
<td>11.7</td>
</tr>
<tr>
<td>Standard Care-Belimumab</td>
<td></td>
<td>$886,300</td>
<td>11.2</td>
<td>17.5</td>
<td>11.2</td>
</tr>
</tbody>
</table>

### Incremental Cost-Effectiveness Ratios

<table>
<thead>
<tr>
<th>Treatment</th>
<th>QALYs</th>
<th>Life Years</th>
<th>evLYGs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incremental Cost-Effectiveness Ratios</td>
<td>$89,700</td>
<td>$113,900</td>
<td>$77,800</td>
</tr>
</tbody>
</table>

QALYs: quality-adjusted life years; evLYGs: equal value of life years gained
One Way Sensitivity Analyses: Belimumab

- Monthly costs of AD health state* [$3000, $7000]
- Utility in CR health state* [0.72, 0.9]
- Utility in AD health state [0.6, 0.7]
- Monthly costs of CR health state [$500, $1000]
- Monthly costs of ESRD health state* [$6000, $12000]
- Utility in PR health states* [0.63, 0.79]
# Base-Case Results: Voclosporin

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Drug Cost</th>
<th>Total Cost</th>
<th>QALYs</th>
<th>Life Years</th>
<th>evLYGs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voclosporin</td>
<td>$215,300</td>
<td>$928,500</td>
<td>12.6</td>
<td>18.4</td>
<td>12.8</td>
</tr>
<tr>
<td>Standard Care-Voclosporin</td>
<td></td>
<td>$784,400</td>
<td>11.7</td>
<td>17.6</td>
<td>11.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incremental Cost-Effectiveness Ratios</th>
<th>QALYs</th>
<th>Life Years</th>
<th>evLYGs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incremental Cost-Effectiveness Ratios</td>
<td>$149,300</td>
<td>$174,300</td>
<td>$131,500</td>
</tr>
</tbody>
</table>

QALYs: quality-adjusted life years; evLYGs: equal value of life years gained
One Way Sensitivity Analyses: Voclosporin

- Monthly costs of AD health state* [$3000, $7000]
- Utility in CR health state* [0.72, 0.9]
- Utility in AD health state [0.6, 0.7]
- Monthly costs of CR health state [$500, $1000]
- Monthly costs of ESRD health state* [$6000, $12000]
- Utility in PR health states* [0.63, 0.79]

ICER for Upper Input
ICER for Lower Input

Incremental Costs per QALY

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# Probabilistic Sensitivity Analysis

<table>
<thead>
<tr>
<th>Threshold</th>
<th>Belimumab</th>
<th>Voclosporin</th>
</tr>
</thead>
<tbody>
<tr>
<td>$50,000/QALY</td>
<td>25%</td>
<td>0.3%</td>
</tr>
<tr>
<td>$100,000/QALY</td>
<td>52%</td>
<td>11%</td>
</tr>
<tr>
<td>$150,000/QALY</td>
<td>69%</td>
<td>49%</td>
</tr>
<tr>
<td>$200,000/QALY</td>
<td>79%</td>
<td>79%</td>
</tr>
<tr>
<td>$250,000/QALY</td>
<td>86%</td>
<td>93%</td>
</tr>
<tr>
<td>$300,000/QALY</td>
<td>90%</td>
<td>98%</td>
</tr>
</tbody>
</table>

QALY: quality-adjusted life year
## Deterministic Scenario Analyses

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Base-Case Results</th>
<th>Societal Perspective</th>
<th>Lower Survival in Response States</th>
<th>Lower Utilities in Response States</th>
<th>Increased Time Spent in AD Prior to ESRD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belimumab</td>
<td>$89,700</td>
<td>$66,100</td>
<td>$170,000</td>
<td>$115,000</td>
<td>$108,300</td>
</tr>
<tr>
<td>Voclosporin</td>
<td>$149,300</td>
<td>$132,000</td>
<td>$237,400</td>
<td>$185,900</td>
<td>$173,100</td>
</tr>
</tbody>
</table>

Results presented as cost per quality adjusted life year (QALY)
AD – active disease
### Deterministic Scenario Analyses (continued)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Base-Case Results</th>
<th>Treatment Discontinuation at 6 Months for Active Disease</th>
<th>Alternative Costs of Health States Calculation *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belimumab</td>
<td>$89,700</td>
<td>-</td>
<td>$142,500</td>
</tr>
<tr>
<td>Voclosporin</td>
<td>$149,300</td>
<td>$121,800</td>
<td>$195,200</td>
</tr>
</tbody>
</table>

Results presented as cost per quality adjusted life year (QALY)

* Based on cost ratios between ESRD and other health states, data in confidence
Limitations

• Lack of high-quality data on racial/ethnic subgroups

• Uncertainty around:
  • Long-term disease progression
  • Duration of active disease state in the long-term model
  • Duration of therapy and long-term clinical effect of the therapies
Comments Received

• Comment 1: Differential treatment duration for responders and non-responders
  • Change: Duration of treatment in response states – 3 years; duration of treatment in active disease state – 18 months

• Comment 2: Costs of ESRD state
  • Change: Costs of ESRD state sourced from Medicare-covered patients
Conclusions

• **Belimumab**: Incremental cost-effectiveness ratio is $89,700 /QALY

• **Voclosporin**: Incremental cost-effectiveness ratio is $149,300 /QALY

• There is a larger uncertainty in cost effectiveness of voclosporin than in cost effectiveness of belimumab.
Questions?
Manufacturer Public Comment and Discussion
Conflicts of Interest:

- Dr. Rubin is a full-time employee of GlaxoSmithKline.
Eric Turowski, MBA, Vice President of Market Access
Aurinia Pharmaceuticals, Inc.

Conflicts of Interest:

• Eric is a full-time employee of Aurinia Pharmaceuticals, Inc.
Public Comment and Discussion
Dina Thachet, BS, CCLS, Patient Advocate
Lupus and Allied Diseases Association, Inc.

Conflicts of Interest:

• No financial conflicts of interest to disclose.
Toni Grimes, MS, Patient with Lupus
Lupus Foundation of America

Conflicts of Interest:

• No financial conflicts of interest to disclose.
Conflicts of Interest:

- No financial conflicts of interest to disclose.
Lunch

Meeting will resume at 12:20 pm ET
Voting Questions
Clinical Evidence
1. Given the currently available evidence, is the evidence adequate to demonstrate that the net health benefit of **belimumab (Benlysta) plus standard induction therapy** is superior to that provided by **standard induction therapy alone**?

A. Yes

B. No
2. Given the currently available evidence, is the evidence adequate to demonstrate that the net health benefit of **voclosporin (Lupkynis™)** plus **standard induction therapy** is superior to that provided by **standard induction therapy** alone?

A. Yes

B. No
Potential Other Benefits and Contextual Considerations
When making judgements of overall long-term value for money, what is the relative priority that should be given to *any* effective treatment for lupus nephritis, on the basis of the following contextual considerations?
1. Contextual Consideration: **Short-term risk of death for patients without treatment**

A. Very low priority

B. Low priority

C. Average priority

D. High priority

E. Very high priority

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2. Contextual Consideration: **Magnitude of the lifetime impact on individual patients of the condition being treated**

A. Very low priority
B. Low priority
C. Average priority
D. High priority
E. Very high priority

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3. Contextual Considerations: **Other (as relevant)**

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<tr>
<th></th>
<th>A. Very low priority</th>
<th>B. Low priority</th>
<th>C. Average priority</th>
<th>D. High priority</th>
<th>E. Very high priority</th>
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What are the relative effects of belimumab versus standard induction therapy for lupus nephritis on the following outcomes that inform judgement of the overall long-term value for money of belimumab?
1. Belimumab: Patients’ ability to achieve major life goals related to education, work, or family life

A. Major negative effect
B. Minor negative effect
C. No difference
D. Minor positive effect
E. Major positive effect
2. Belimumab: Caregivers’ quality of life and/or ability to achieve major life goals related to education, work, or family life

A. Major negative effect
B. Minor negative effect
C. No difference
D. Minor positive effect
E. Major positive effect
3. Belimumab: *Health inequities*

A. Major negative effect
B. Minor negative effect
C. No difference
D. Minor positive effect
E. Major positive effect
4. Belimumab: **Preservation of kidney function improves the chances for patients to have children**

A. Major negative effect  
B. Minor negative effect  
C. No difference  
D. Minor positive effect  
E. Major positive effect
What are the relative effects of voclosporin versus standard induction therapy for lupus nephritis on the following outcomes that inform judgement of the overall long-term value for money of voclosporin?
5. Voclosporin: Patients’ ability to achieve major life goals related to education, work, or family life

A. Major negative effect
B. Minor negative effect
C. No difference
D. Minor positive effect
E. Major positive effect
6. Voclosporin: Caregivers’ quality of life and/or ability to achieve major life goals related to education, work, or family life

A. Major negative effect

B. Minor negative effect

C. No difference

D. Minor positive effect

E. Major positive effect
7. Voclosporin: **Health inequities**

A. Major negative effect
B. Minor negative effect
C. No difference
D. Minor positive effect
E. Major positive effect
8. Voclosporin: **Preservation of kidney function improves the chances for patients to have children**

A. Major negative effect

B. Minor negative effect

C. No difference

D. Minor positive effect

E. Major positive effect
Long-Term Value for Money
1. Given the available evidence on comparative effectiveness and incremental cost-effectiveness, and considering other benefits, disadvantages, and contextual considerations, what is the long-term value for money of treatment at current pricing with belimumab versus standard induction therapy?

A. Low long-term value for money at current price
B. Intermediate long-term value for money at current price
C. High long-term value for money at current price
2. Given the available evidence on comparative effectiveness and incremental cost-effectiveness, and considering other benefits, disadvantages, and contextual considerations, what is the long-term value for money of treatment at current pricing with **voclosporin** versus standard induction therapy?

A. Low long-term value for money at assumed price
B. Intermediate long-term value for money at assumed price
C. High long-term value for money at current assumed price
Break

Meeting will resume at 1:45 pm ET
Policy Roundtable
## Policy Roundtable

<table>
<thead>
<tr>
<th>Policy Roundtable Participant</th>
<th>Conflict of Interest</th>
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<tr>
<td><strong>Kathleen Arntsen</strong>, BA, President &amp; CEO, Lupus and Allied Diseases Association, Inc.</td>
<td>LADA receives funding from health care related organizations, including Aurinia and GSK, but members associated with LADA are not compensated.</td>
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<tr>
<td><strong>Linda Goler Blount</strong>, MPH, President &amp; CEO, Black Women’s Health Imperative</td>
<td>No financial conflicts of interest to disclose.</td>
</tr>
<tr>
<td><strong>Christele Felix</strong>, BS, Chief Operating Officer, LupusChat</td>
<td>No financial conflicts of interest to disclose.</td>
</tr>
<tr>
<td><strong>Meggan Mackay</strong>, MD, MS, Investigator and Professor of Medicine, The Feinstein Institutes for Medical Research, Northwell Health</td>
<td>Dr. Mackay participates in industry-sponsored clinical trials for lupus nephritis and is reimbursed for subjects recruited and followed.</td>
</tr>
<tr>
<td><strong>Jay McKnight</strong>, PharmD, BCPS, Vice President, Pharmacy Clinical and Specialty Strategies, Humana Pharmacy Solutions</td>
<td>Dr. Jay McKnight is a full-time employee of Humana.</td>
</tr>
<tr>
<td><strong>Simrat Randhawa</strong>, MD, MBA, Senior Vice President, Medical and Clinical Affairs, Aurinia Pharmaceuticals, Inc.</td>
<td>Dr. Simrat Randhawa is a full-time employee of Aurinia Pharmaceuticals, Inc.</td>
</tr>
<tr>
<td><strong>Brad Rovin</strong>, MD, Professor of Medicine and Pathology, Ohio State University Wexner Medical Center</td>
<td>Dr. Brad Rovin is involved in several trials of novel therapeutics for lupus nephritis and is a consultant on the medical/scientific advisory boards to design trials for these therapeutics. His organization receives less than 25% funding from pharmaceutical companies for clinical trials.</td>
</tr>
<tr>
<td><strong>Bernard Rubin</strong>, DO, MPH, Medical Director, GlaxoSmithKline</td>
<td>Dr. Bernard Rubin is a full-time employee of GlaxoSmithKline.</td>
</tr>
<tr>
<td><strong>Emily Tsiao</strong>, PharmD, Clinical Pharmacist, Premera Blue Cross</td>
<td>Dr. Emily Tsiao is a full-time employee of Premera Blue Cross.</td>
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Next Steps

• Meeting recording posted to ICER website next week

• Final Report published on April 16th
  • Includes description of New England CEPAC votes, deliberation, policy roundtable discussion

• Materials available at: https://icer.org/assessment/lupus-nephritis-2021/
Adjourn