Aurinia Presents Breadth of Data at ASN 2023 Demonstrating Clinical Importance of LUPKYNIS® for Managing Lupus Nephritis

- Patients treated with LUPKYNIS® in a repeat kidney biopsy sub-study achieved improvement in histologic activity with stable chronicity scores and no evidence of chronic injury.
- A propensity analysis of AURORA 1 suggested that LUPKYNIS® plus standard of care improved safety and demonstrated earlier reductions in proteinuria when compared to a conventional regimen consisting of higher doses of both glucocorticoids and mycophenolate mofetil.
- A post-hoc analysis showed Black patients experienced improved outcomes and better renal response when using LUPKYNIS®.
- Additional poster presentations provided insights into ongoing pre-clinical research, biomarkers, and other important areas to improve care for LN patients.

ROCKVILLE, Md. & EDMONTON, Alberta--(BUSINESS WIRE)-- Aurinia Pharmaceuticals Inc. (NASDAQ: AUPH) (Aurinia or the Company), announced today the presentation of nine studies (one oral and eight posters) at the annual American Society of Nephrology Kidney Week 2023 Convergence taking place in Philadelphia, PA, November 2-5. The data reinforce previous findings on the safety and effectiveness of LUPKYNIS® (voclosporin), a second generation calcineurin inhibitor (CNI), for the treatment of adult patients with active LN, as shown in the AURORA Clinical Program, comprised of the Phase 3 AURORA 1 clinical trial and the Phase 3 AURORA 2 extension study.

Results from an analysis of kidney biopsy samples collected from patients participating in the AURORA Clinical Program were presented in an oral session. To characterize the long-term renal impact of LUPKYNIS® at the histologic level, researchers analyzed repeat kidney biopsies from a subset of patients who completed one year of treatment in the AURORA 1 clinical trial, including 16 patients in the active treatment arm who received LUPKYNIS® in combination with mycophenolate mofetil (MMF) and low-dose glucocorticoids and 10 patients in the control arm treated with MMF and low-dose glucocorticoids alone.

Histologic changes from baseline to approximately 18 months post-treatment were assessed using the modified National Institutes of Health (NIH) activity and chronicity indices, wherein the activity index provides a measure of active inflammation in LN, and the chronicity index provides a measure of irreversible kidney injury. Activity scores for both arms improved to a similar degree, while the chronicity scores remained stable in both arms. These results confirmed the safety profile of LUPKYNIS® showing no associated chronic injury with use.
Importantly, LUPKYNIS® -treated patients in the overall AURORA 2 cohort maintained stable renal function over the last two years of the study, as measured by eGFR analysis and experienced numerically greater mean reductions in urine protein creatinine ratio (UPCR), compared to patients in the control arm.

“These findings from a small subset of patients further strengthen the overall evidence supporting the long-term safety of LUPKYNIS® in LN patients. The addition of LUPKYNIS® to MMF and low-dose glucocorticoids to treat LN can lead to significantly earlier and greater reductions in proteinuria while allowing patients to maintain stable renal function. This is a critical aspect to consider for patients with LN, as proteinuria is associated with a major decline in kidney function and, in some cases, kidney failure. This increased understanding of the long-term safety and efficacy profile of LUPKYNIS® will contribute to improving outcomes over time for this patient population,” said Samir V. Parikh, M.D., nephrologist at the Ohio State University Wexner Medical Center and lead study author.

A propensity analysis of the Aspreva Lupus Management Study (ALMS) and AURORA 1 study suggested that LUPKYNIS® plus standard of care may reduce patient exposure to toxicities associated with taking mycophenolate mofetil (MMF) and glucocorticoids alone and demonstrated earlier reductions in proteinuria. Safety and efficacy outcomes for propensity-matched patients with active LN from the ALMS and AURORA 1 study were assessed at three and six months. The data showed an improved safety profile over the first six months of treatment with LUPKYNIS® in combination with low-dose glucocorticoids and lower-dose MMF without compromising efficacy. Patients who received the LUPKYNIS®-based regimen experienced reductions in exposure to glucocorticoids and MMF and earlier reductions in proteinuria compared to patients treated with higher doses of glucocorticoids and MMF.

In a subset analysis of three years of data from the AURORA Clinical Program, 44.4% of Black patients treated with LUPKYNIS® experienced an improvement in complete renal response at 36 months (n=18) compared to 14.3% of Black patients who achieved complete renal response when treated with MMF and glucocorticoids alone (n= 7). These findings among Black patients, a population that often experiences worse outcomes and lower responses to LN treatment, are consistent with the treatment response seen across all racial and ethnic groups treated with LUPKYNIS® in the AURORA Clinical Program.

“These data contribute to our growing body of evidence that LUPKYNIS® enables positive long-term kidney outcomes for people living with LN, a debilitating, yet common complication that occurs in about half of people with lupus,” said Dr. Greg Keenan, Chief Medical Officer of Aurinia. “The results presented at ASN this week demonstrate important clinical and mechanistic findings associated with LUPKYNIS® treatment. We remain deeply committed to improving the lives of people living with autoimmune diseases, by advancing transformative treatment options that are not only safe, but clinically meaningful, for long-term use.”

Additional poster presentations provided a view into current, new, and upcoming research.

Following is the complete guide to Aurinia’s presentations at ASN 2023:
Title: *Repeat kidney biopsies from the AURORA 2 study of voclosporin in active lupus nephritis*

Authors: Samir V. Parikh, Clint Abner, Ernie Yap, Krista Piper, Rob Huizinga, Henry Leher

Date: Thursday, November 2, 2023

Time: 5:42 p.m. – 5:51 p.m. ET

Oral Session: Glomerular Diseases - Clinical and Translational Studies

Location: Room 103

Title: *Urinary extracellular vesicles reveal distinct biological effects of voclosporin in the treatment of lupus nephritis*

Authors: Martijn H. van Heugten, Kuang-Yu Wei, Hester van Willigenburg, Faith Demir, Linda M. Rehaume, John Viel, Markus M. Rinschen, Ewout J. Hoorn

Date: Thursday, November 2, 2023

Time: 10:00 a.m. – 12:00 p.m. ET

Location: Poster Hall, #TH-PO550

Title: *Registry of US adult patients treated with LUPKYNIS for lupus nephritis*

Authors: Lily Cipolla, Victoria Bal, Henry Leher

Date: Friday, November 3, 2023

Time: 10:00 a.m. – 12:00 p.m. ET

Location: Poster Hall, #INFO16-FR

Title: *Voclosporin treatment in adolescents with lupus nephritis (VOCAL)*

Authors: Nicola Waddingham, Amber Rosales, Gigi Cheung, Blake Potter, Mary Palmen

(Presented by Ernie Yap)

Date: Friday, November 3, 2023

Time: 10:00 a.m. – 12:00 p.m. ET

Location: Poster Hall, #INFO17-FR

Title: *Long-term safety and efficacy of voclosporin in Black patients with lupus nephritis*

Authors: Gabriel Contreras, Matt Baker, Lucy Hodge, Ernie Yap

Date: Saturday, November 4, 2023

Time: 10:00 a.m. – 12:00 p.m. ET

Location: Poster Hall, #SA-PO876

Title: *Comparison of dual-immunosuppressive therapy and a voclosporin-based, triple-immunosuppressive regimen for lupus nephritis: a propensity analysis of ALMS and AURORA 1 studies*

Authors: Ernie Yap, Maria Dall’Era, Matt Truman, Lucy S. Hodge, Neil Solomons

Date: Saturday, November 4, 2023

Time: 10:00 a.m. – 12:00 p.m. ET

Location: Poster Hall, #SA-PO877

Title: *Comparative effects of cyclosporine and voclosporin on primary human proximal tubular epithelial (PTEC) gene expression*

Authors: Theresa Aliwarga, Linda M. Rehaume, Catherine K. Yeung, Jonathan Himmelfarb, Edward J. Kelly

Date: Saturday, November 4, 2023

Time: 10:00 a.m. – 12:00 p.m. ET

Location: Poster Hall, #TH-PO103
About Lupus Nephritis

Lupus Nephritis is a serious manifestation of systemic lupus erythematosus (SLE), a chronic and complex autoimmune disease. About 200,000-300,000 people live with SLE in the U.S., and about one-third of these people are diagnosed with lupus nephritis at the time of their SLE diagnosis. About 50 percent of all people with SLE may develop lupus nephritis. If poorly controlled, lupus nephritis can lead to permanent and irreversible tissue damage within the kidney. Black and Asian people with SLE are four times more likely to develop lupus nephritis and Hispanic people are approximately twice as likely to develop the disease, compared to White people with SLE. Black and Hispanic people with SLE also tend to develop lupus nephritis earlier and have worse outcomes, compared to White people with SLE.

About LUPKYNIS®

LUPKYNIS® is the first U.S. Food and Drug Administration and European Commission-approved oral medicine for the treatment of adult patients with active LN. LUPKYNIS is a novel, structurally modified calcineurin inhibitor (CNI) with a dual mechanism of action, acting as an immunosuppressant through inhibition of T-cell activation and cytokine production and promoting podocyte stability in the kidney. The recommended starting dose of LUPKYNIS is three capsules twice daily with no requirement for serum drug monitoring. Dose modifications can be made based on Aurinia’s proprietary personalized eGFR-based dosing protocol. Boxed Warning, warnings, and precautions for LUPKYNIS are consistent with those of other CNI-immunosuppressive treatments.

About Aurinia

Aurinia Pharmaceuticals is a fully integrated biopharmaceutical company focused on delivering therapies to treat targeted patient populations with high unmet medical needs that are impacted by autoimmune, kidney and rare diseases. In January 2021, the Company introduced LUPKYNIS® (voclosporin), the first FDA-approved oral therapy dedicated to the treatment of adult patients with active lupus nephritis. The Company’s head office is in Edmonton, Alberta, its U.S. commercial office is in Rockville, Maryland. The Company
focuses its development efforts globally.

**INDICATION AND IMPORTANT SAFETY INFORMATION**

**INDICATION**

LUPKYNIS® is indicated in combination with a background immunosuppressive therapy regimen for the treatment of adult patients with active LN. Limitations of Use: Safety and efficacy of LUPKYNIS have not been established in combination with cyclophosphamide. Use of LUPKYNIS is not recommended in this situation.

**IMPORTANT SAFETY INFORMATION**

**BOXED WARNINGS: MALIGNANCIES AND SERIOUS INFECTIONS**

Increased risk for developing malignancies and serious infections with LUPKYNIS or other immunosuppressants that may lead to hospitalization or death.

**CONTRAINDICATIONS**

LUPKYNIS is contraindicated in patients taking strong CYP3A4 inhibitors because of the increased risk of acute and/or chronic nephrotoxicity, and in patients who have had a serious/severe hypersensitivity reaction to LUPKYNIS or its excipients.

**WARNINGS AND PRECAUTIONS**

Lymphoma and Other Malignancies: Immunosuppressants, including LUPKYNIS, increase the risk of developing lymphomas and other malignancies, particularly of the skin. The risk appears to be related to increasing doses and duration of immunosuppression rather than to the use of any specific agent.

Serious Infections: Immunosuppressants, including LUPKYNIS, increase the risk of developing bacterial, viral, fungal, and protozoal infections (including opportunistic infections), which may lead to serious, including fatal, outcomes.

Nephrotoxicity: LUPKYNIS, like other CNIs, may cause acute and/or chronic nephrotoxicity. The risk is increased when CNIs are concomitantly administered with drugs associated with nephrotoxicity.

Hypertension: Hypertension is a common adverse reaction of LUPKYNIS therapy and may require antihypertensive therapy.

Neurotoxicity: LUPKYNIS, like other CNIs, may cause a spectrum of neurotoxicities: severe include posterior reversible encephalopathy syndrome (PRES), delirium, seizure, and coma; others include tremor, paresthesia, headache, and changes in mental status and/or motor and sensory functions.

Hyperkalemia: Hyperkalemia, which may be serious and require treatment, has been reported with CNIs, including LUPKYNIS. Concomitant use of agents associated with hyperkalemia may increase the risk for hyperkalemia.
QTc Prolongation: LUPKYNIS prolongs the QTc interval in a dose-dependent manner when dosed higher than the recommended lupus nephritis therapeutic dose. The use of LUPKYNIS in combination with other drugs that are known to prolong QTc may result in clinically significant QT prolongation.

Immunizations: Avoid the use of live attenuated vaccines during treatment with LUPKYNIS. Inactivated vaccines noted to be safe for administration may not be sufficiently immunogenic during treatment with LUPKYNIS.

Pure Red Cell Aplasia: Cases of pure red cell aplasia (PRCA) have been reported in patients treated with another CNI immunosuppressant. If PRCA is diagnosed, consider discontinuation of LUPKYNIS.

Drug-Drug Interactions: Avoid co-administration of LUPKYNIS and strong CYP3A4 inhibitors or with strong or moderate CYP3A4 inducers. Reduce LUPKYNIS dosage when co-administered with moderate CYP3A4 inhibitors. Reduce dosage of certain P-gp substrates with narrow therapeutic windows when co-administered.

ADVERSE REACTIONS

The most common adverse reactions (>3%) were glomerular filtration rate decreased, hypertension, diarrhea, headache, anemia, cough, urinary tract infection, abdominal pain upper, dyspepsia, alopecia, renal impairment, abdominal pain, mouth ulceration, fatigue, tremor, acute kidney injury, and decreased appetite.

SPECIFIC POPULATIONS

Pregnancy/Lactation: May cause fetal harm. Advise not to breastfeed.

Renal Impairment: Not recommended in patients with baseline eGFR ≤45 mL/min/1.73 m2 unless benefit exceeds risk. Severe renal impairment: Reduce LUPKYNIS dose.

Mild and Moderate Hepatic Impairment: Reduce LUPKYNIS dose. Severe hepatic impairment: Avoid LUPKYNIS use.

Please see Prescribing Information, including Boxed Warning, and Medication Guide for LUPKYNIS.

References
