

**Annual European Congress of Rheumatology  
(EULAR 2018)**

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**CLINICAL ADVANCES IN SYSTEMIC LUPUS ERYTHEMATOSUS**

New data on a promising biological treatment and successful use of shingles vaccine

**Amsterdam, The Netherlands, 14 June 2018:** The results of two studies presented today at the Annual European Congress of Rheumatology (EULAR 2018) demonstrate exciting advances for individuals suffering from systemic lupus erythematosus (SLE).<sup>1,2</sup> The first is a phase II clinical study of a promising oral treatment, baricitinib.<sup>1</sup> The second demonstrates the effective use of the shingles vaccine\* in SLE patients who are particularly prone to this infection.<sup>2</sup>

“Novel therapeutic strategies are needed for SLE, which causes significant morbidity and mortality, and so we are delighted to see the positive results from the phase II trial of baricitinib,” said Professor Thomas Dörner, Chairperson of the Abstract Selection Committee, EULAR. “In addition, we welcome data on the vaccination of SLE patients against shingles, as currently there is considerable clinical uncertainty around this issue.”

SLE is an autoimmune disease that is also referred to as lupus. It typically affects women between the ages of 15 and 50, and symptoms flare up unpredictably. SLE is caused by complicated interactions between the immune system and environmental factors leading to an imbalance in the way the immune system works. This imbalance causes inflammation which, if untreated, can lead to disability and a shortened lifespan. Different factors may trigger SLE in different people, and symptoms may vary considerably. In some the illness is never life-threatening but can cause chronic skin rashes or arthritis. Others develop potentially life-threatening disease in the kidneys, lungs or heart. Treatment of SLE traditionally involves non-specific anti-inflammatory or immunosuppressive medications. However, this approach is ineffective in many patients, and can be associated with many undesirable side effects.

**Baricitinib provides significant clinical improvements with acceptable benefit/risk profile in SLE patients<sup>1</sup>**

Baricitinib is an oral selective inhibitor of Janus kinase (JAK)1 and JAK2 which has been approved for the treatment of rheumatoid arthritis in Europe and Japan. In this phase II study, SLE patients taking baricitinib had a significant improvement in several clinical outcomes compared to placebo.<sup>1</sup>

“Our results demonstrated significant clinical improvements in SLE patients taking baricitinib versus placebo with an acceptable side effect profile,” said Daniel Wallace, MD, FACP, MACR,

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\* The live attenuated herpes zoster vaccine, Zostavax was used in this study

Professor of Medicine, University of California-Los Angeles and Associate Director of the Rheumatology Fellowship Program at Cedars-Sinai Medical Center in Los Angeles, California. “We look forward to progressing baricitinib in further clinical studies as a promising new treatment for people suffering with SLE.”

Current biologic agents for SLE target the B-cell due to the importance of autoantibodies in driving the origination and development of the disease. However, the interferon (IFN) pathway and other cytokines (such as IL-23, IL-12 and IL-2) have recently emerged as a promising therapeutic target. By targeting common components of the signalling cascade, such as the JAK-STAT pathway, there may be therapeutic advantages by more complete suppression of IFN and other cytokines in disease-related processes.<sup>3</sup>

This study included 314 patients with SLE receiving stable background therapy who were randomized 1:1:1 to placebo, baricitinib 2- or 4-mg once daily. Patients on baricitinib 4mg achieved significant resolution of arthritis or rash (SLEDAI-2K<sup>†</sup>) compared with placebo (67% vs 53%, p<0.05) which was the primary endpoint of the study. Patients on baricitinib 4mg also achieved a significantly greater SRI-4<sup>‡</sup> response (64% vs 48%, p<0.05), as well as flare reduction (SFI<sup>§</sup>), improvement in Lupus Low Disease Activity State (LLDAS) and reduced tender joint count. Rates of adverse events leading to treatment discontinuation and serious adverse events (SAE) were higher for both baricitinib doses compared to placebo. There were no deaths, malignancies, major adverse cardiovascular events, tuberculosis, or serious herpes zoster infections; one SAE of deep vein thrombosis was reported in a patient with risk factors.<sup>1</sup>

## **Shingles vaccine well tolerated in patients with SLE<sup>2</sup>**

Shingles, or herpes zoster (HZ), is a painful reactivation of varicella zoster virus which typically happens decades after an initial infection known as varicella or chickenpox. Patients with SLE are 10 times more likely to contract shingles compared to healthy individuals and it can also affect them at an earlier age.<sup>4</sup> Although rarely life-threatening, shingles is associated with significant pain and associated morbidity and may lead to disruption or discontinuation of otherwise necessary immunosuppressant medications.

Specific guidelines about the use of the shingles vaccine in SLE patients have been lacking, largely due to a theoretical concern of vaccine-induced infection as well as the lack of clinical or experimental data upon which to base recommendations.<sup>4</sup>

“Our study showed that the live attenuated shingles vaccine was well tolerated and provoked an expected antibody response in stable SLE patients not receiving intensive immunosuppression,” said Dr. C.C. Mok, Department of Medicine, Tuen Mun Hospital, Hong Kong (study author). “This is the first randomised controlled trial to study the shingles vaccine in individuals with SLE. We hope our results will inform guidelines and ultimately lead to the

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<sup>†</sup> Systemic Lupus Erythematosus Disease Activity Index 2000.

<sup>‡</sup> Systemic Lupus Erythematosus Responder Index.

<sup>§</sup> SELENA-SLEDAI Flare Index.

safe administration of the vaccine in appropriate SLE patients to reduce the burden of shingles in these individuals.”

The study included 90 patients with stable SLE who were not receiving intensive immunosuppression. All participants had a history of HZ/chickenpox and were randomised to receive shingles vaccine or placebo. After six weeks antibody levels in the vaccine group increased by 59.8% versus a reduction of 2.1% in the control group (p=0.01) demonstrating the effect of the vaccine. Significance was maintained after adjustment for baseline value, lymphocyte count, immunoglobulin levels, SLEDAI\*\*, and other clinical variables.<sup>2</sup>

No serious adverse events were reported. In the vaccine group, significantly more patients reported mild pain and redness at the injection site which subsided in a few days. None of the patients had clinical shingles infection post vaccination.<sup>2</sup>

**Abstract number: OP0019 and OP0117**

**-ENDS-**

#### **NOTES TO EDITORS**

**For further information on this study, or to request an interview with the study lead, please do not hesitate to contact the EULAR Press Office:**

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#### **About Rheumatic and Musculoskeletal Diseases**

Rheumatic and musculoskeletal diseases (RMDs) are a diverse group of diseases that commonly affect the joints but can affect any organ of the body. There are more than 200 different RMDs, affecting both children and adults. They are usually caused by problems of the immune system, inflammation, infections or gradual deterioration of joints, muscle and bones. Many of these diseases are long term and worsen over time. They are typically painful and limit function. In severe cases, RMDs can result in significant disability, having a major impact on both quality of life and life expectancy.<sup>5</sup>

#### **About ‘Don’t Delay, Connect Today!’**

‘Don’t Delay, Connect Today!’ is a EULAR initiative that unites the voices of its three pillars; patient (PARE) organisations, scientific member societies and health professional associations - as well as its international network - with the goal of highlighting the importance of early diagnosis and access to treatment. In the European Union alone, over 120 million people are currently living with a rheumatic disease (RMD), with many cases undetected.<sup>6</sup> The ‘Don’t Delay, Connect Today!’ campaign aims to highlight that early diagnosis of RMDs and access to treatment can prevent further damage, and also reduce the burden on individual life

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\*\* Systemic Lupus Erythematosus Disease Activity Index.

and society as a whole.

### **About EULAR**

The European League against Rheumatism (EULAR) is the European umbrella organisation representing scientific societies, health professional associations and organisations for people with RMDs. EULAR aims to reduce the burden of RMDs on individuals and society and to improve the treatment, prevention and rehabilitation of RMDs. To this end, EULAR fosters excellence in education and research in the field of rheumatology. It promotes the translation of research advances into daily care and fights for the recognition of the needs of people with RMDs by the EU institutions through advocacy action.

To find out more about the activities of EULAR, visit: [www.eular.org](http://www.eular.org).

### **References**

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- <sup>5</sup> van der Heijde D, *et al.* Common language description of the term rheumatic and musculoskeletal diseases (RMDs) for use in communication with the lay public, healthcare providers and other stakeholders endorsed by the European League Against Rheumatism (EULAR) and the American College of Rheumatology (ACR). *Annals of the Rheumatic Diseases*. 2018;doi:10.1136/annrheumdis-2017-212565. [Epub ahead of print].
- <sup>6</sup> EULAR. 10 things you should know about rheumatic diseases fact sheet. Available at: <https://www.eular.org/myUploadData/files/10%20things%20on%20RD.pdf> [Last accessed April 2018].