

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

Amsterdam, The Netherlands, 13-16 June 2018

**FREQUENCY OF JOINT REPLACEMENTS HALVED  
IN RHEUMATOID ARTHRITIS PATIENTS BETWEEN 1997-2010**

New data suggests biological therapy not the only influencing factor

**Amsterdam, The Netherlands, 13 June 2018:** The results of two studies presented today at the Annual European Congress of Rheumatology (EULAR 2018) investigate joint replacement procedures in rheumatoid arthritis (RA) patients.<sup>1,2</sup> The first study demonstrates that joint replacement procedures have significantly reduced in RA patients in the past decade<sup>1</sup> and the second investigates the impact of biologic therapies on this change using the British Society for Rheumatology Biologics Registry for Rheumatoid Arthritis (BSRBR/RA).<sup>2</sup>

“We welcome these results demonstrating such a dramatic reduction of joint replacements in RA patients in recent years,” said Professor Robert Landewé, Chairperson of the Scientific Programme Committee, EULAR. “It’s also very interesting to see data relating specifically to the impact of biological treatments on this outcome given the breadth of progress in the management of RA over the same time period.”

**Joint replacement surgery halved in rheumatoid arthritis patients between 1997-2010<sup>1</sup>**

The retrospective cohort study examined data from around one million people between 1997 and 2010 using administrative healthcare data. Results demonstrate a striking reduction of 51.9% ( $p < 0.001$ ) in joint replacement surgery in RA patients between 1997 and 2010.<sup>1</sup>

The number of joint replacements in matched controls increased by 31.9% ( $p = 0.002$ ) over the 13 years, although remained significantly less than in RA patients at both time points (4.78% vs. 0.47% in 1997 and 2.30% vs. 0.62% in 2010). Rates of cardiac interventions did not change significantly over time in either group suggesting the changes observed in joint replacement surgery were due to improvements in the treatment of RA rather than access to surgical procedures.<sup>1</sup>

“Literature to date has reported inconsistent findings,” said Dr. John Hanly, Professor of Medicine (Rheumatology) and Pathology at Dalhousie University and attending staff rheumatologist at the Queen Elizabeth II Health Sciences Center, Halifax, Nova Scotia, Canada. “However, our results add significant evidence to show a clear reduction in joint replacement surgery in RA patients, most likely due to improvements in medical management over the last few decades.”

Cases of RA were identified using a method previously validated in the same data set.<sup>3</sup> Each case was matched by age and gender to four randomly selected controls. The number of RA

cases increased from 3,913 (0.42%) to 4,911 (0.52%) over the study, the mean age changed from 56.7 to 60.1 years and the proportion of females from 70.8 to 73.9%. Annual frequency of joint replacement surgery as well as coronary artery interventions was compared.<sup>1</sup>

## **Impact of biological therapy on rate of joint replacement procedures<sup>2</sup>**

The management of RA has progressed significantly over the last 25 years from providing relief of symptoms to regimens that impact disease activity.<sup>4</sup> This evolution has been multifactorial, however it is widely recognised that the introduction of biological therapy with tumour necrosis factor inhibitors (TNFi) in the late 1990s revolutionised treatment.<sup>4,5,6,7</sup> Furthermore, recent research from the UK and Denmark has demonstrated a decline in the incidence of joint replacements for RA patients directly following the introduction of TNFi.<sup>8,9</sup> However, findings presented today suggest that, although TNFi use may reduce the need for total hip replacement (THR) in older and more severe RA patients, no association was found in younger or less severe patients. Neither was there an association in rates of total knee replacement (TKR) or other joint replacement.<sup>2</sup>

“The use of biologic therapies has been routinely offered as an explanatory factor for the reduction in rates of joint replacement over recent years,” said Mr Samuel Hawley, University of Oxford. “Our study offers some support for this in that a reduction in hip replacement procedures was observed in older patients on TNFi, although our results also suggest additional factors are likely to be involved. For example, the drive for earlier diagnosis/treatment and increased prescription rates of conventional synthetic disease-modifying antirheumatic drugs. It’s important to highlight that we used an observational study design and that despite our best efforts to address confounding factors, these may still partly explain our findings”.

The study analysed the differences between RA patients who were TNFi or conventional synthetic disease-modifying antirheumatic drug (csDMARD) users in a 1:1 propensity score matched cohort of 19,116 patient records using the BSRBR/RA data. In the full study population, investigators found no significant association between TNFi use and THR or TKR. However, there was a significant reduction of THR by 40% in those over 60 years taking TNFi (HR 0.60 [CI:0.41-0.87]) and THR rate was cut by a quarter in TNFi users when analyses were restricted to more severe patients (DAS>5.1), although this didn’t reach significance (HR 0.74 [CI 0.51-1.05]). No significant findings were found relating TNFi users with TKR procedures.<sup>2</sup>

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**-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>10</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>11</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 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>10</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>11</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].