Annual European Congress of Rheumatology (EULAR) 2017

Madrid, Spain, 14-17 June 2017

GENES EXPLAIN HIGHER PREVALENCE OF CARDIOVASCULAR DISEASE IN CHRONIC IMMUNE MEDIATED INFLAMMATORY DISEASE PATIENTS

Better understanding of genetics underlying CVD risk in these patients fundamental to development of more efficient preventive and treatment strategies

Madrid, Spain, 16 June 2017: The results of a study presented today at the Annual European Congress of Rheumatology (EULAR) 2017 represent an important step towards characterising the genetic basis of cardiovascular disease (CVD) risk in chronic immune-mediated inflammatory diseases (IMID)*.[1]

Specific genetic loci (different positions on the chromosome) previously identified as being associated with CVD risk in the general population have been found to be significantly increased in association with CVD risk among chronic IMID patients. From these, 4 loci were found to have different genetic effects across different chronic IMID.[1]

Out of a total of 10 genetic patterns significantly associated with CVD risk across chronic IMID, 2 showed a highly significant association with CVD risk in rheumatoid arthritis (RA), psoriatic arthritis (PsA), and systemic lupus erythematosus (SLE). Functional analysis of these 2 genetic patterns revealed their role in key pathological mechanisms behind these rheumatic diseases.[1]

Previous clinical studies had demonstrated that chronic IMID have a higher prevalence of cardiovascular (CV) events compared to the general population.[2,3] This increase in CV events is explained by a combination of accelerated atherosclerosis and endothelial dysfunction with inflammation providing the central link.[2,3]

* highly disabling chronic disorders, like RA, PsA and SLE, that are characterised by the activation of multiple immune and inflammatory pathways against that individual's body components

"Our research findings help explain the higher prevalence of cardiovascular events observed in chronic IMID patients compared to the general population," said lead author Dr. Antonio Julià from the Rheumatology Research Group at the Vall d'Hebron Hospital, Barcelona, Spain.

"At this stage, our results are of significance to better understanding the disease process. However, they could also have clinical implications, since some of the associated biological pathways are targeted by current IMID therapies. Gaining a better understanding of the genetic mechanisms underlying CVD risk in these patients could be fundamental to the development of more efficient preventive and treatment strategies," he explained.

A total of 17 genetic loci previously identified as being associated with CVD risk in the general population were found to be significantly associated with CVD risk among the chronic IMID patient groups ($p<0.05$). From these, 4 of the loci were found to have significantly different genetic effects across these diseases ($p<0.05$). In addition, 6 genetic loci linked to chronic IMID risk were found to be associated with an increase in CVD risk, for example the RA risk gene *CFLAR-CASP8*.

To identify global genetic patterns associated with CVD risk across different chronic IMID, a so-called 'cross-phenotype genome-wide meta-analysis' was carried out, which identified a total of 10 genetic patterns significantly associated with CVD risk in these diseases. Two of these genetic patterns showed a highly significant association with CVD risk in RA, PsA and SLE. Functional analysis of these 2 genetic patterns revealed their role in the key cytokine pathways behind rheumatic disease mechanisms.

To characterise the genetic basis of CVD risk in chronic IMID, genetic profiling was carried out on a total of 6,485 patients with one of six chronic IMID (RA, PsA, SLE, psoriasis, Crohn's disease and ulcerative colitis) recruited by the Spanish biomedical consortium IMID Consortium. All patients were Caucasian European from Spain. The presence of CVD was defined as having one or more out of ischaemic heart disease (myocardial infarct and angina), stroke and peripheral arterial disease.

Abstract Number: OP0292

-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 congress Press Office in the Goya Room at the IFEMA, Madrid during EULAR 2017 or on:

Email: eularpressoffice@cohnwolfe.com
Onsite tel: +44 (0)7786 171 476 / +34 91722 3115
Twitter: @EULAR_Press
Youtube: Eular Press Office

About Rheumatic and Musculoskeletal Diseases

Rheumatic and musculoskeletal diseases (RMDs) are a diverse group of diseases that commonly affect the joints, but can also affect the muscles, other tissues and internal organs. 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.

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 Europe alone, over 120 million people are currently living with a rheumatic disease (RMD), with many cases undetected. 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 an umbrella organisation which represents scientific societies, health professional associations and organisations for people with rheumatic and musculoskeletal diseases throughout Europe. EULAR aims to reduce the burden of rheumatic and musculoskeletal diseases on individuals and society and to improve the treatment, prevention and rehabilitation of rheumatic and musculoskeletal diseases. 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 musculoskeletal diseases by the governing bodies in Europe through advocacy action.

To find out more about the activities of EULAR, visit: www.eular.org

References

[1] Aterido A, Cañete JD, Fernández-Nebro A, *et al* on behalf of IMID Consortium (Spain). Genetic variation associated with cardiovascular risk in autoimmune diseases. EULAR 2017; Madrid: Abstract OP0292
[2] Durante A, Bronzato S. The Increased Cardiovascular Risk in Patients Affected by Autoimmune Diseases: Review of the Various Manifestations. *J Clin Med Res*. 2015 Jun; 7(6): 379–384.
[3] Abou-Raya S, Abou-Raya A, Naim A, Abuelkheir H. Chronic inflammatory autoimmune disorders and atherosclerosis. *Ann N Y Acad Sci*. 2007; 1107: 56-67.