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NEW STUDY SHOWS FOR FIRST TIME LINK BETWEEN PASSIVE SMOKING IN CHILDHOOD AND RHEUMATOID ARTHRITIS

Smoking also speeds up disease progression in ankylosing spondylitis

Madrid, Spain, 16 June 2017: The results of a study presented today at the Annual European Congress of Rheumatology (EULAR) 2017 press conference confirmed the link between active smoking and the risk of developing rheumatoid arthritis (RA). However, interestingly, it also suggested for the first time that in smokers, exposure to tobacco early in life through passive smoking in childhood significantly increased this risk.¹

In a second study, the preliminary results of a meta-analysis showed that smoking is associated with increased progression of structural damage to the spine in patients with ankylosing spondylitis (AS). Another important reason why rheumatologists should encourage their AS patients to quit smoking.²

Passive smoking in childhood significantly increased risk of RA in adult smokers

To analyse the impact of active and passive smoking on the risk of developing RA, a large population of female volunteers born between 1925 and 1950 were prospectively followed since 1990. Passive smoking exposure during childhood increased the association between RA risk and adult active smoking. In smokers who had childhood passive exposure to smoke, the hazard ratio was 1.73 compared with non-smokers not exposed during childhood. In contrast, the hazard ratio was 1.37 in active smokers not exposed to passive smoke during childhood.¹

“Our study highlights the importance of avoiding any tobacco environment in children, especially in those with a family history of RA,” said lead author Professor Raphaële Seror from University Hospitals of South Paris, France.

In a separate analysis looking for a potential association between the development of RA and a history of disrupted bowel function, previous chronic diarrhoea was associated with more than double



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the risk of RA (hazard ratio of 2.32), while chronic constipation or alternating between diarrhoea and constipation did not impact risk (hazard ratios of 1.16 and 1.07 respectively).¹

“An association between a history of chronic diarrhoea and the risk of developing RA supports the hypothesis of dysbiosis (a bacterial imbalance in the gut) as a risk factor for the emergence of immune-mediated inflammatory disease,” explained Professor Seror. These data fit perfectly with the preclinical scheme of RA where an external event occurs at an early stage to promote emergence of so-called auto-immunity, followed years later by clinical RA,” she concluded.

Out of 70,598 women, a total of 1,239 patients self-reported developing RA, of which 350 cases were eligible for analysis of the link to active and passive smoking, and 280 in the analysis of the link to a history of an intestinal transit disorder. The mean age at inclusion in the study was 49.0 years; the mean duration of follow-up was 21.2 years.¹

11 self-administered questionnaires were sent to the participants between 1990 and 2014 to collect medical, demographic, environmental and hormonal data and dietary habits. The diagnosis of RA was collected on 2 successive questionnaires. Cases were considered certain if, having declared RA, they had taken a RA specific medication (methotrexate, leflunomide or a biologic) since 2004 (the period from which drug reimbursement data was available). Women were excluded if they had an inflammatory bowel disease and / or no information on their smoking status.¹

Passive smoking was assessed by the following question: "When you were children, did you stay in a smoky room?" Patients were considered exposed if the answer was "yes, a few hours, or yes, several hours a day". The usual intestinal transit, reported by women prior to RA diagnosis (on average 10 years), were classified as normal transit, chronic diarrhoea, chronic constipation, and alternating between diarrhoea and constipation.¹

RA is the most common chronic inflammatory joint disease, affecting about 0.5-1% of the general population and causing progressive joint destruction, disability and reduced life expectancy. In recent years, many potential environmental factors have been associated with an increased risk of developing RA, but so far smoking is the only one that has been extensively studied.^{3,4,5}

Smoking also accelerates disease progression in AS



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To determine whether smoking is associated with more rapid spinal damage and disease progression seen on X-rays in AS patients, a detailed review and meta-analysis of all the relevant, currently available studies was conducted.²

The combined data taken from 8 eligible studies suggested a significant association between smoking and cumulative spinal structural damage (Odds Ratio 2.02). Data from studies investigating the association between smoking and disease progression on spinal X-rays reflected in the formation of new bony growths (known as syndesmophytes^{*}) and / or an increase in size of these syndesmophytes is still being assessed.²

“Smoking constitutes a major risk factor not only for disease susceptibility but also disease severity in patients with AS,” said lead author Professor Servet Akar from Izmir Katip Celebi University Faculty of Medicine, İzmir, Turkey. “Rheumatologists should work hard to encourage their AS patients to quit smoking as this could have a major impact on future quality of life,” he added.

AS is a painful, progressive and disabling form of arthritis caused by chronic inflammation of the joints in the spine. Prevalence of AS varies globally, and is estimated at 23.8 per 10,000 in Europe and 31.9 per 10,000 in North America.⁶ Although AS is strongly associated with the genotype HLA-B27, not everyone testing positive for the marker goes on to develop the disease.⁷ Smoking, among other risk factors, increases the risk of developing AS.⁸

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^{*} Bony growths originating inside a ligament, commonly seen in the ligaments of the spine, specifically the ligaments in the intervertebral joints leading to fusion of vertebrae



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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:

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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 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



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