



# Abstract Highlights

The following selected highlights spotlight several interesting and timely abstracts presented at the European Alliance of Associations for Rheumatology (EULAR) Congress 2023, covering topics such as recurring joint inflammation in juvenile idiopathic arthritis, systemic lupus erythematosus, and the importance of a healthy lifestyle in patients with osteoarthritis.

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## Osteoarthritis: Association Between Healthy Lifestyles and Mortality

OSTEOARTHRITIS (OA), the most common form of arthritis worldwide, affects 527.8 million people. Previous studies have linked OA to higher rates of mortality, compared to the general population. While OA may not directly cause mortality, lifestyle factors such as obesity, low walking frequency, depression, anxiety, unrefreshed sleep, and physical inactivity may be contributing factors to the high rates of mortality. Therefore, a research team at the Southern Medical University, Guangzhou, China, aimed to explore the associations of both individual and combined healthy lifestyle factors with the risk of mortality among patients with OA.

Data from the UK biobank was used to identify 104,142 participants with OA aged between 40–69 years, with follow-up conducted over 10 years. Outcomes measured were all-cause mortality and cause-specific mortality. A healthy lifestyle score was allocated to participants based on physical activity, healthy diet, moderate alcohol, no current smoking, healthy BMI, being less sedentary, social connection, and enough sleep. Statistical analysis utilised a restricted cubic spline fitted for Cox regression models, with a two-sided  $p < 0.05$  considered statistically significant.

Results showed that the mean age of participants was 59.84 years and 42% of participants were male. The optimal range of lifestyle factors were found to be a BMI between 26–30, sleep duration between 7–8 hours per day, moderate physical activity of over 550 minutes per week, vigorous physical activity of 100–500 minutes per week, and less than 5 hours a day of sedentary time. By using the multivariable Cox regression analysis model, the research team found that each lifestyle factor was associated with a reduced risk of all-cause mortality (hazard ratio [HR]: 0.29), cancer-cause mortality (HR: 0.40), and cardiovascular disease-cause mortality (HR: 0.22) in patients with OA.

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In conclusion, this study found non-linear associations between lifestyle factors and all-cause mortality in patients with OA, and defined the optimal range of healthy lifestyle factors. This healthy lifestyle pattern could significantly reduce the risk of mortality in patients with OA. ●

## Higher Comorbidity Burden in Early Psoriatic Arthritis Compared to Early Rheumatoid Arthritis

SEVERAL factors contribute to the progression from psoriasis to psoriatic arthritis (PsA), including mechanical inflammation and dysbiosis. Nevertheless, there is limited data regarding the role of cardiovascular risk factors and comorbidities in this progression. While it is known that increased BMI and obesity are risk factors for the transition from psoriasis to PsA, the role of other cardiovascular risk factors and other specific comorbidities in the progression remains unclear.

Alla Ishchenko, Department of Rheumatology, University Hospitals Leuven, Belgium, who presented the data at EULAR 2023, hypothesised that comorbidities (cardiovascular and metabolic) are present at the early stages of PsA, are not only a consequence of long-lasting inflammation, and may serve as a second hit.

Ishchenko and colleagues aimed to investigate the comorbidities associated with metabolic burden and cardiovascular morbidity in patients with early PsA. They compared the rate of comorbidities in this group with that of healthy volunteers matched by sex and age, as well as patients with early rheumatoid arthritis (RA). The study included patients with PsA (n=67), early RA (n=50), and healthy volunteers (n=61). All three patient groups had comparable age.

Numerically, the rate of overall comorbidities was higher in patients with PsA (74%) and RA (67%); however, the difference did not reach statistical significance as compared with the control group. Notably, both patients with early PsA and early RA demonstrated a higher prevalence of multiple cardiovascular risk factors.

Dyslipidaemia was the most prevalent comorbidity in early RA and early PsA. Out of all lipids, only

the levels of high-density lipoprotein were significantly lower in patients with PsA. Both patients with PsA and RA had high rates of obesity, whereas this was observed in only one-third of the control group. Both patients with RA and PsA had a higher incidence of Type 2 diabetes, while patients with early PsA had a notably higher rate of depression compared to patients with RA and the control group. The incidence of other comorbidities, including arterial hypertension, gout, malignancy, and all other conditions, was comparable among the three groups.

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Despite having similar age and BMI, patients with PsA exhibited a higher prevalence of cardiovascular disease. Moreover, a greater proportion of patients with early PsA had a Charlson comorbidity index of at least 1 when compared with patients with early RA and the control group.

Ishchenko and team concluded that during the early stages of both RA and PsA, patients experience a significant cardiovascular burden. Notably, in the early disease phase of PsA, individuals already exhibit multiple cardiovascular risk factors and comorbidities. Dyslipidaemia and abdominal obesity emerged as the most prevalent comorbidities in this context, highlighting the presence of cardiovascular and metabolic comorbidities during the early stages of PsA. ●





## Recurring Joint Inflammation in Juvenile Idiopathic Arthritis

JOINT inflammation tends to recur in the same joints in patients with juvenile idiopathic arthritis (JIA), according to research presented at EULAR 2023.

JIA is often a relapsing/remitting disease, but the mechanisms behind it and how to prevent it are currently unknown. Sascha L. Heckert, Leiden University Medical Centre, the Netherlands, and colleagues, investigated joint inflammation patterns over time to gain insight into disease flares.

The investigation used data from the BeSt Kids study (N=91), which included patients with oligo-articular, rheumatoid factor-negative polyarticular, and psoriatic JIA. The patients were randomised into three treatment strategy arms. However, if the disease was active, treatment was intensified.

The follow-up was 2 years, with 10 visits. A total of 6,097 joints were assessed for clinical inflammation during this time.

At baseline, 15% of joints were clinically inflamed. Of these joints, a total of 42% flared during follow-up, as opposed to 11% of the joints that were not active at baseline.

The researchers also noted that joint activity at baseline was predictive for activity in the same joint during follow-up (odds ratio [OR]: 3.9; 95% confidence interval [CI]: 3.5–4.3). Furthermore, joints that were inflamed at baseline were 1.6 times more likely to be inflamed during follow-up than those that were not (95% CI: 1.3–2.1).

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Although the distribution of joint inflammation was different in the different types of JIA, the association between baseline and later joint activity was seen in oligo-articular (OR: 3.4; 95% CI: 2.1–5.6), rheumatoid factor-negative polyarticular (OR: 4.1; 95% CI: 3.6–4.6) and psoriatic (OR: 1.7; 95% CI: 1.2–2.7) JIA.

To conclude, Heckert stated that joint inflammation tends to recur in the same joints, which points towards a local effect. While this effect is currently unknown, Heckert believes that this could be due to tissue priming, meaning the tissue becomes susceptible to inflammation once inflamed, and this could be a potential treatment target. ●

## Outcomes of Systemic Lupus Erythematosus and Associated Pulmonary Arterial Hypertension Study

THE LATEST results of a 10-year multicentre cohort study on improvements and challenges in systemic lupus erythematosus (SLE)-associated pulmonary arterial hypertension (PAH), a frequent complication of connective tissue diseases, were presented at EULAR 2023. The study's aims were to explore changes in disease characteristics, initial treatment regimen, and long-term survival for patients with SLE-PAH, and to investigate reasoning for improvements in survival.

The study was carried out by the Chinese SLE Treatment and Research Group, using patients found on the nationwide CSTA Registry, including over 100 rheumatology centres across China. It identified 720 patients diagnosed with SLE; 636 of these had SLE and confirmed pre-capillary PAH, and 610 were included in the study. This group was split into two cohorts according to the dates of their diagnosis: A, 2011–mid-2016 (n=314), and B, mid-2016–2021 (n=296). Patients with other comorbidities that cause pulmonary hypertension, including severe lung diseases, pulmonary embolisms, and heart failure, were excluded from the study. Another single-centre cohort of patients with idiopathic PAH was recruited as a control group.

SLE-PAH showed more favourable prognosis than systemic sclerosis-PAH, and a less severe disease condition when compared with idiopathic PAH. Those in Cohort B demonstrated an earlier stage of PAH than Cohort A. Cohort B were also diagnosed later; had lower pulmonary artery pressure, less right heart dilation, and lower pulmonary respiratory resistance; and demonstrated better performance during a 6-minute walk test. More patients in Cohort B were classified into the low-risk group (approximately 47%); treated with PAH target medication (90%); and achieved PAH treatment goals (around 83%).

The 5-year survival rate of SLE-PAH was raised significantly from 73% to 83%, with improvements mostly in those of low to intermediate risk. Rates did not improve in the high-risk group.

Researcher Xingbei Dong, Department of Rheumatology and Clinical Immunology, Peking Union Medical College Hospital, China, stated that whilst the “good news is, during the past 20 years, many PAH-targeted drugs have been developed, and the treatment strategy is constantly being refined,” challenges still remain in managing SLE-PAH, and further research is required. ●

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