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## OSTEOARTHRITIS REPRESENTS RISK FOR VARIETY OF COMORBIDITIES ACROSS DIFFERENT ORGAN SYSTEMS

**But weight loss could represent an important management strategy**

**Osteoarthritis is one of the most common types of arthritis. It is commonly thought of as a degenerative disease, caused by wear and tear over time. This common and disabling disease places a significant burden on both patients and health care systems. Three abstracts presented at the 2022 EULAR Congress in Copenhagen shed new light on risk of a wide range of comorbidities following osteoarthritis diagnosis, and the impact of body weight on structural defects and the need for knee replacement surgery. Results suggest prevention of overweight and obesity from young adulthood could have a major impact on the burden of knee osteoarthritis, and associated health care costs.**

Previous studies have shown that patients with osteoarthritis have a higher risk of developing comorbidities; however, much research has focused on only a few conditions, or did not consider the chronology of disease onset relative to osteoarthritis. Dr Anne Kamps and colleagues set out to determine the risk of comorbidity following knee or hip osteoarthritis using electronic health records from patients in the Netherlands.

The study population consisted of over 1.8 million patients, and examined 58 comorbidities. Overall, there was increased risk of being diagnosed with 11 of these comorbidities after a diagnosis of knee osteoarthritis. The comorbidities were extremely varied, ranging from other rheumatic and musculoskeletal complaints such as gout, back and neck pain, to anaemia, cataracts, chronic kidney disease, coronary heart disease, hearing loss, obesity, sleeping disorders, and thromboembolic disease.

Following the original abstract submission, Dr Kamps adds an update that for 30 of the 58 studied comorbidities, exposure to knee OA showed a HR statistically significant larger than 1. Largest positive associations (HR with (99.9% CIs)) were found for obesity 2.55 (2.29-2.84), fibromyalgia 2.06 (1.53-2.77), polymyalgia 1.72 (1.38-2.14), drug abuse 1.40 (1.21-1.94), and rheumatoid arthritis (RA) 1.52 (1.28-1.81). For COPD 0.80 (0.70-0.91) and tobacco abuse 0.86 (0.75-0.99) there was a statistically significant negative association (HR<1) with exposure to knee OA. All other comorbidities did not show an association with previous exposure to knee OA.

For 26 comorbidities, exposure to hip OA showed a statistically significant HR larger than 1. The largest positive associations were found for polymyalgia rheumatica 1.81 (1.41-2.32), fibromyalgia 1.70 (1.10-2.63), spinal disc herniation 1.64 (1.49-1.80), thromboembolic disease 1.47 (1.28-1.70) and alcohol abuse 1.44 (1.11-1.88). There were no negatively associated comorbidities as for all other comorbidities the HRs of hip OA were non-significant."

For people with osteoarthritis in the hip, 7 comorbidities showed a statistically significant link. As for knee osteoarthritis, this included anaemia and sleeping disorders. The other linked diseases were fibromyalgia and spinal disc herniation, as well as atrial fibrillation, peripheral vascular disease, and solid malignancies.

These findings suggest that the management of osteoarthritis should consider the risk of other long-term-conditions, but further research on causality is needed.

In another presentation, Dr Sultana Monira Hussain showed trajectories of body mass index (BMI) from early adulthood to late midlife, and their correlation with the incidence of total knee arthroplasty (TKA) for osteoarthritis. The study examined almost 25,000 participants from the Melbourne Collaborative Cohort Study.

Using group-based trajectory modelling, six distinct trajectories of BMI were identified. Over a period of 12.4 years, 5.4% of participants had TKA. When compared to the trajectory of people with lower normal to normal BMI, the hazard ratios for TKA increased in all other BMI trajectories. Most of the burden of TKA and associated healthcare costs occurred in those who had a normal body mass index in young adulthood and transitioned to overweight or just obese in midlife.

The authors estimated that 28.4% of TKA would be reduced if individuals followed the trajectory that was one lower – representing a saving to the national health system of \$AUD 373 million. This would require a weight difference of 6-8 kg and mean that at a population level, a significant reduction in TKA and associated healthcare costs could be achieved by preventing this level of weight gain from young adulthood to midlife.

Body weight was also addressed in a study from Zubeyir Salis and colleagues. Scores from radiographic analyses of knees at baseline and at 4–5 years' follow up were obtained from three independent data sets in the Netherlands and the US.

Results showed that change in BMI was positively associated with both the incidence and progression of knee osteoarthritis. Change in BMI was also positively associated with narrowing of joint space on the medial but not the lateral side of the knee. Osteophytes of the tibial and femoral surfaces were also seen on the medial but not the lateral side of the knee.

The group concluded that each one-unit reduction in BMI is associated with a 5–8% decrease in the odds of the incidence and progression of the structural defects of knee osteoarthritis. This supports the idea that weight loss is of benefit in people with and at-risk of osteoarthritis.

### **Source**

Kamps A, et al. Risk of comorbidity following osteoarthritis diagnosis: a cohort study in the Netherlands from the FOREUM\* Initiative. Presented at EULAR 2022; abstract OP0225.

Hussain SM, et al. Trajectories of body mass index from early adulthood to late midlife and incidence of total knee arthroplasty for osteoarthritis. Presented at EULAR 2022; abstract OP0226.

Salis Z, et al. Weight loss is associated with reduced incidence and progression of structural defects in knee osteoarthritis. Presented at EULAR 2022; abstract OP0227.

### **About EULAR**

EULAR – the European Alliance of Associations for Rheumatology – is the European umbrella organisation representing scientific societies, health professional associations and organisations for people with rheumatic and musculoskeletal diseases (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.

### **About the EULAR European Congress of Rheumatology**

Since its introduction in 2000, the annual EULAR European Congress of Rheumatology has become the primary platform for exchange of scientific and clinical information in Europe. It is also a renowned forum for interaction between medical doctors, scientists, people with arthritis/rheumatism, health professionals and representatives of the pharmaceutical industry worldwide. The EULAR congress is usually held in June in one of the major cities in Europe.

The scientific programme covers a wide range of topics on clinical innovations, clinical, translational and basic science. Meetings set up by associations of people with arthritis/rheumatism, health professionals and the health care industry complement the programme. The poster sessions, offering lively interaction between presenters and participants, are regarded by many as the heart of the congress.

Over the years, the EULAR Congress has gained a reputation of being a most innovative platform for the practicing physician particularly with respect to the acquisition of information on novel clinical research. The congress attracts more than 18,000 delegates from more than 130 countries.

The aim of the EULAR European Congress of Rheumatology is to provide a forum of the highest standard for scientific, both clinical and basic, educational, and social exchange between professionals involved in rheumatology, liaising with patient organisations, in order to achieve progress in the clinical care of people with rheumatic diseases.

### **Contact**

EULAR Communications, [communications@eular.org](mailto:communications@eular.org), Tel. +41 44 716 30 30

### **Notes to Editors**

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