Smoking may cause worsening of disease in rheumatoid arthritis

Patients who smoke may experience earlier joint damage than ex-smokers or those who have never smoked.

**INTRODUCTION**
Rheumatoid arthritis is a chronic inflammatory disease that affects a person’s joints, causing pain and disability. As the disease goes on, the joints can become damaged, a process referred to as radiographic progression because the damage can be seen on a radiograph (X-ray). This damage has an important bearing on how well people can use and move their joints, and can affect their life and well-being in many ways.

**WHAT DID THE AUTHORS HOPE TO FIND?**
The authors aimed to see whether information that is easily available when patients are first diagnosed with rheumatoid arthritis could predict who will develop radiographic progression. This included whether patients smoked now, or ever had done in the past.

**WHO WAS STUDIED?**
The study included 487 patients diagnosed with rheumatoid arthritis. All patients were aged over 18 years and had experienced symptoms of rheumatoid arthritis for less than 1 year. To be included in the study, patients could not have received any previous treatment with disease-modifying antirheumatic drugs (DMARDs) or corticosteroid medicines, or have only received corticosteroids at a stable low dose.

**HOW WAS THE STUDY CONDUCTED?**
This study was an investigator-initiated clinical trial that reflected how patients are usually treated in Sweden, which means that patients received the normal treatment options that patients would get in the country. Several factors that were thought to be possible predictors of whether patients would have radiographic progression after 1 year were recorded at diagnosis, including gender, age, markers of inflammation, joint destruction (so-called erosions), auto-antibodies and smoking habits.

**WHAT WERE THE MAIN FINDINGS OF THE STUDY?**
A total of 311 participants had radiographs (X-rays) of their hands and feet when they entered the study and again after 1 year; of these, 79 had radiographic progression. Being a current cigarette smoker was strongly associated with joint damage. Among current smokers, 43% had radiographic progression, while 21% of non-current smokers (never or past smokers) had radiographic progression. Other factors that predicted radiographic progression were having erosions at diagnosis, and levels of two markers of inflammation called erythrocyte sedimentation rate and C-reactive protein. The results were consistent after taking into account the different drug treatments that the patients were receiving. When the authors analysed the risks, current smokers with erosions at diagnosis had a more than 60% risk of radiographic progression, regardless of how bad their inflammation or disease was.

**ARE THESE FINDINGS NEW?**
There are older studies which have suggested that individuals with rheumatoid arthritis who are smokers may develop more radiographic damage over time, but this is the first recent study on patients with newly diagnosed disease looking at possible predictors for rapid radiographic progression to include smoking habits in the analysis. The findings highlight the importance of taking smoking habits into account. Since ex-smokers did not experience the same levels of radiographic progression as current smokers, the study highlights the importance of smoking cessation programmes in patients with rheumatoid arthritis.

**HOW RELIABLE ARE THE FINDINGS?**
The study’s potential limitations are its lack of data on smoking intensity (how many packs a day were smoked, and for how many years) and the fact that it was not designed to work out why smoking affects radiographic progression. Much more research is needed into this to work out what the link is. Another potential limitation is that some patients did not have available X-rays or information about their smoking habits.

**WHAT DO THE AUTHORS PLAN ON DOING WITH THIS INFORMATION?**
The authors would like to do further research to understand the effect of smoking cessation programmes that have recently been started for all patients at several clinics in Sweden and elsewhere. Reports show that...
ex-smokers do as well as people who have never smoked, suggesting that smoking cessation is beneficial for this reason too.

**WHAT DOES THIS MEAN FOR ME?**
This study highlights how important it is for patients with rheumatoid arthritis to refrain from smoking, since those who smoke experience more joint damage more quickly. If you would like to find out more about smoking cessation programmes, you should speak to your doctor.

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