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New study shows bone marrow lesions could help identify rapidly progressing osteoarthritis

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A new study from the Medical Research Council Lifecourse Epidemiology Unit, University of Southampton, shows lesions, which can best be seen on MRI scans, could help identify individuals who are more likely to suffer from more rapidly progressing osteoarthritis.

Osteoarthritis is the most common type of arthritis in the UK and can cause the joints to become painful and stiff. Almost any joint can be affected, but it most often causes problems in the knees, hips, and small joints of the hands. It can progress at varying speeds.

The SEKOIA study, a major international osteoarthritis disease-modifying trial, carried out MRI scanning on the knees of 176 men and women over 50 years old. They were then followed up for an average of three years with repeated knee x-rays. Individuals with abnormalities on their MRI scans at the first appointment were compared to those without to examine the effect on disease progression.

Individuals with bone marrow lesions (BMLs) on their MRI scan were found to have osteoarthritis that progressed more rapidly than those that did not. On average, the space within the joint is lost at a rate of 0.15mm per year however the Southampton study shows that, overall, individuals with BMLs had a loss rate that was 0.10mm per year faster than those without BMLs. This may lead to earlier need for joint replacement or other intervention.

BMLs show up on MRI as regions of bone beneath the cartilage with ill-defined high signal and represent areas of bone marrow oedema, fibrosis, and necrosis. The Southampton researchers believe that therapies to target these abnormalities may slow the progression of this disabling joint disease, but further work is required to examine this.

Dr Mark Edwards, Clinical Lecturer in Rheumatology at the MRC Lifecourse Epidemiology Unit, University of Southampton, led the study which has been published in The Journal of Rheumatology.

He comments: "Osteoarthritis causes a significant burden to individuals and the healthcare system as a whole. If we can identify those people who may experience a rapid progression of the disease, this may be of benefit to both physicians and patients. The next step would be to explore the mechanisms through which bone marrow lesions might influence the progression of osteoarthritis and whether this could lead to a novel treatment."

Professor Cyrus Cooper, Professor of Rheumatology and Director of the MRC Lifecourse Epidemiology Unit, University of Southampton adds: "This study points to the utility of data derived from large randomised controlled trials in deriving predictive models which will facilitate a stratified approach to therapy in knee osteoarthritis, the commonest cause of arthritis worldwide."

Source:
University of Southampton
