Study finds genetic risk factor for knee osteoarthritis

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(Medical Xpress)—A newly published paper reports that individuals with radiographic knee osteoarthritis (OA) who had a specific pattern of gene variations in the interleukin-1 receptor antagonist gene (IL1RN), which is involved in controlling inflammation, were more likely to progress to severe disease than those without the gene variations.

In addition, higher body mass index, often associated with increased risk for developing severe OA, was only predictive for progression of OA in subjects who had the IL1RN gene variations.

The study was done under the direction of Dr. Joanne Jordan, director of the Thurston Arthritis Research Center at the University of North Carolina School of Medicine. "Progression of knee osteoarthritis often leads to severe disability and total knee replacement in many patients. The factors determining progression are poorly understood," said Dr. Jordan, "and the genetic markers we reported appear to substantially improve our ability to identify which knee OA patients are more likely to progress. Our goal of course is to use such information to improve drug development and medical management for our OA patients."

The study was published online by the journal *Osteaoarthritis and Cartilage* on April 18, 2013. It evaluated radiographic progression of knee OA using data from UNC's ongoing Johnston County Osteoarthritis Project, a well characterized population in North Carolina. Of 1,153 subjects, 154 had radiographic signs of knee OA initially. If they had the specific pattern of IL1RN gene variations that is found in approximately 40 percent of Caucasians they were more than twice as likely to have radiographic progression of the disease during the 4 to 11 years monitoring period than all other individuals with knee OA.

"This study was a critical validation of the importance of IL-1 receptor antagonist genetic variations in knee osteoarthritis that we have seen in other cohorts," said Dr. Kenneth Kornman, chief executive officer of Interleukin Genetics and a co-author of the study. "We hope to start using this genetic information in partnerships to help guide therapeutic development to improve the management of knee OA."

More information:
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