

30 new gene variants linked to Crohn's disease

November 22 2010

An international team of scientists, including researchers from Karolinska Institutet, Sweden, have found 30 new gene variants associated with the risk of Crohn's disease. The results of the study provide valuable insight into the causal mechanisms of the disease, and offer hope of developing new drugs to prevent bowel inflammation in the future.

"This is so far the largest genetic study of the inflammatory bowel diseases (IBD), which include Crohn's disease," says Dr Mauro D'Amato, associate professor at Karolinska Institutet's Department of Bioscience and Nutrition and leader of the Swedish part of the study.

"Based on the new results, we can now explain 23 per cent of the [genetic predisposition](#) to Crohn's disease."

The study, which is published in the scientific journal [Nature Genetics](#), is based on a genetic survey of over 22,000 Crohn's disease patients and 29,000 controls from Europe, North America, New Zealand, and Australia. An estimated 25,000-plus people in Sweden have Crohn's disease, and over 500 new cases are diagnosed every year. Crohn's disease is a [chronic inflammation](#) of the bowels; it is intermittent and commonly manifests with symptoms such as [diarrhoea](#) and abdominal pain, but also fever, rectal bleeding, weight loss, fatigue, joint pain, and skin disorders can be part of the clinical picture. Crohn's disease is treated with anti-inflammatory drugs and/or surgery.

Earlier twin studies have shown that Crohn's disease is caused by the

interaction of genetic and environmental factors, and people with affected relatives are at higher risk of developing the disease. In the present study, researchers have identified a total of 71 genes associated with [Crohn's disease](#). In line with previous results, most of these genes are involved in the control of the interactions between the intestinal bacterial flora and local [immune cells](#) in the mucosa, and in the activation of what is known as the adaptive immune response.

"The most exciting findings may come now from the identification of the biological role of those genes for which we know very little or nothing at all," says Dr D'Amato.

The study is one of several projects being conducted within the frame of the International IBD Genetic Consortium (IIBDGC), and has been coordinated by the corresponding author Dr Miles Park from the University of Cambridge. The researchers hope that future large-scale studies will provide clues as to why inflammatory bowel diseases occur. This will ease diagnosis and enable doctors to design improved therapeutic strategies.

More information: Franke A, McGovern DPB, Barret JC, Wang K et al. Genome-wide meta-analysis increases to 71 the number of confirmed Crohn's disease susceptibility loci, *Nature Genetics*, online 21 November 2010

Provided by Karolinska Institutet

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