Researchers identify colorectal cancer gene

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Case Western Reserve University School of Medicine researchers published a study in the March 7th issue of *The American Journal of Human Genetics* identifying the hereditary components of colorectal cancer (CRC).

“Identification of Susceptibility Genes for Cancer in a Genome-wide Scan: Results from the Colon Neoplasia Sibling Study” is the first large linkage study of families with CRC and colon polyps in the country. Because only five percent of CRC cases are due to known gene defects, this NIH-funded study is designed to identify the remaining CRC-related susceptibility genes.

The team built on a previous study which identified a specific region on chromosome 9q that harbors a CRC susceptibility gene. Upon review of a whole genome scan of all chromosome pairs in 194 families, the researchers were able to identify additional CRC gene regions on chromosomes 1p, 15q, and 17p.

While the overall Case Western Reserve University School of Medicine study looked at families with colon cancer and colon polyps, the study also analyzed families with different clusters of cancer, such as CRC with multiple polyps and CRC with breast cancer. These different phenotypes appeared to link to different chromosomal regions, which the study teams says supports the idea of multiple susceptibility genes causing different types of cancers. These links will be further investigated in the next phase of the study.

"The goal of our study is to identify the CRC genes in susceptible patients to better understand who may be prone to develop CRC and why," said Georgia L. Wiesner, M.D., lead author of "Identification of Susceptibility Genes for Cancer in a Genome-wide Scan: Results from the Colon Neoplasia Sibling Study." "This study is step towards future the of genetic CRC testing."

The genome-wide scan used in this study will help physicians elucidate the genetic factors in CRC in the future. Once the genes are identified, physicians will be able to use these genetic markers to identify "at risk" patients and to develop better cancer screening strategies, such as colonoscopies well before standard screening begins at age 50. Currently, without new gene tests, family history is the only tool to determine a person's risk for CRC. Knowing the exact gene will allow physicians to better take care of CRC patients and lead to earlier screening.

Source: Case Western Reserve University