More findings on gene involved in childhood asthma

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Asthma researchers have found that a gene variant known to raise the risk of childhood asthma in European children plays a similar role in white American children, but not in African American children.

The most common chronic illness among children in the developed world, asthma is a complex disease in which a variety of genes are thought to interact with each other and with environmental influences to produce its effects. As in many other genetic diseases, researchers expect that better knowledge of gene associations will pave the way for new treatments and to customizing treatments to each patient's genetic profile.

Researchers from The Children's Hospital of Philadelphia found that variants in the ORMDL3 gene were associated with childhood-onset asthma among U.S. patients of European ancestry. In 2007 a study team based in Europe had identified the ORMDL3 gene, located on chromosome 17, as contributing to childhood asthma among British and German children.

The current study, from The Children's Hospital of Philadelphia and the University of Pennsylvania School of Medicine, appeared as a brief online report Aug. 29 in the *Journal of Allergy and Clinical Immunology*.

"We replicated the European findings among American children, and showed that the gene plays a role in asthma of any severity level," said study leader and pediatric pulmonologist Hakon Hakonarson, M.D.,

Ph.D., director of the Center for Applied Genomics at Children's Hospital. "The previous group had detected the association of ORMDL3 with asthma by examining families having two or three members with severe disease."

Furthermore, said Hakonarson, "Through the testing of additional markers, our data suggest that other genes outside the region occupied by ORMDL3 might have important roles in raising susceptibility to asthma." His group plans further studies to further refine this and other regions.

Drawing on patients from the Children's Hospital network, the study team analyzed DNA from 807 white children with asthma, compared to 2,583 white children without the disease. Another cohort consisted of African American children, of whom 1,456 had asthma and 1,973 were healthy controls. The researchers used highly automated gene-scanning equipment at Children's Hospital's Center for Applied Genomics, the largest pediatric genotyping program in the world.

"Because asthma is a very heterogeneous disease, the genes involved in childhood-onset asthma may be very different from those involved in asthma that first appears in adults," said Hakonarson. "Furthermore, the biological mechanisms by which genetic variants contribute to asthma are not well understood. However, we will continue our investigations, to shed light on how we might use genetic knowledge to develop more effective treatments for this common disease. These treatments will be a form of personalized medicine, better tailored to the genetic makeup of the individual patient."

Source: Children's Hospital of Philadelphia