MedicalXpress

Researchers identify genes related to vitiligo

October 10 2016

Credit: CC0 Public Domain

For the past decade, Richard Spritz's lab at the University of Colorado Anschutz Medical Campus has been searching for potential causes of vitiligo, an autoimmune disease that gives rise to patches of white skin and hair.

In a study published in the Oct. 10 edition of the journal *Nature Genetics*, Richard Spritz, MD, Professor and Director of the Human Medical

Genetics and Genomics Program at the University of Colorado School of Medicine, and a team of international researchers announce they have identified 23 locations on the human genome that are newly linked to susceptibility for vitiligo.

By identifying these genes, the investigators can provide a framework for the genetic architecture and biological mechanisms of vitiligo, highlight relationships with other autoimmune diseases and melanoma and offer potential targets for treatment.

"This study doubles the number of known genes involved in risk for vitiligo," said Spritz.

Spritz and his fellow researchers conducted genome-wide association studies on 4,680 people with vitiligo and 39,586 control cases and found the genes that provide a framework for the genetic architecture and biological mechanisms of vitiligo and highlight relationships with other autoimmune diseases and melanoma.

Spritz's lab is trying to identify causal mutations in these genes by using DNA sequencing and genetic studies involving a large number of vitiligo patients from various different ethnic groups. This study focused on subjects of European ancestry.

"One of the purposes of the genome project was to give us the tools to do more complicated disease analysis," said Spritz. "What's emerging in general for complex diseases is that it is changes in gene regulation rather than gene structure that are causes."

A better understanding of the causes of vitiligo could also lead to breakthroughs in other conditions. Vitiligo is epidemiologically associated with several other autoimmune diseases, including autoimmune thyroid disease, pernicious anemia, rheumatoid arthritis,

adult-onset type 1 diabetes, Addison's disease, and lupus. The researchers found associations between genes indicated in some of those conditions and vitiligo, and while it remains uncertain whether they reflect shared or different causes, it offers promising areas for future research.

More information: Genome-wide association studies of autoimmune vitiligo identify 23 new risk loci and highlight key pathways and regulatory variants, *Nature Genetics*, nature.com/articles/doi:10.1038/ng.3680

Provided by CU Anschutz Medical Campus