Adipose hormone may play role in obesity-related asthma

24 March 2019

Credit: CC0 Public Domain

New research suggests a hormone released from fat tissue is critical in the development of obesity-related asthma and may be a target of future treatments for the disease. The findings will be presented Saturday, March 23 at ENDO 2019, the Endocrine Society's annual meeting in New Orleans, La.

Along with genetic susceptibility and environmental exposures, obesity is emerging as a risk factor for asthma. Many studies have shown obesity also affects the course of asthma. However, scientists do not understand how obesity contributes to asthma. An estimated 40 percent of people with asthma have obesity.

"There is a great unmet need for novel treatments for obesity-related asthma, because these patients are less-responsive to current therapies," said lead researcher M. Furkan Burak, M.D., of the Harvard T.H. Chan School of Public Health and Brigham and Women's Hospital in Boston, Mass.

The study looked at the adipose hormone aP2, which is increased in the circulation of humans and animals with obesity. It is involved in the body's inflammatory responses and previously has been shown to contribute to chronic inflammatory diseases associated with obesity, such as diabetes and heart disease. In previous research, the investigators detected increased aP2 levels in blood and lung fluid in mice with obesity.

In the new study, they measured aP2 levels in blood and lung fluid of people with and without asthma. They found aP2 levels were 25.4 percent higher in the blood of people who were affected by asthma and met the criteria for obesity or being overweight, compared with people without asthma. Higher levels of aP2 were associated with asthma status only in people with overweight or obesity. There was no significant difference in aP2 levels in normal-weight people with and without asthma.

They also measured aP2 levels in lung fluid collected from 13 people with obesity and 36 normal-weight people with and without asthma. They found aP2 levels from the individuals with obesity were 23 percent higher compared with the other study participants.

"These data suggest that aP2 may be an independent risk factor for obesity-related asthma," said co-investigator Gurol Tuncman, M.D. Ph.D., of the Harvard T.H. Chan School of Public Health. "The findings also suggest anti-aP2 treatments can impede obesity-related asthma development and its chronic complications. Our studies present an exciting opportunity for clinical translation of anti-aP2 drugs to treat obesity-related asthma."

Provided by The Endocrine Society