

People with type 2 diabetes more likely to suffer from breathlessness, restrictive lung disease

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Breathlessness and conditions of restrictive lung disease (RLD), such as pulmonary fibrosis, may be a late complication of type 2 diabetes. These are the key findings of a joint study undertaken by researchers from the German Center for Diabetes Research (DZD) and the German Center for Lung Research (DZL) under the leadership of the University Hospital Heidelberg. The latest results have been published in the journal *Respiration*.

One in four patients in outpatient treatment settings suffer from breathlessness. Acute and chronic lung diseases are usually the main causes. Studies show that many people with interstitial lung disease (IDL) also suffer from type 2 diabetes. But do patients with type 2 diabetes also have a higher incidence of lung and respiratory diseases? Could breathlessness, IDL and RDL be a consequence of diabetes? These questions were investigated for the first time in a study by researchers from the German Centre for Diabetes Research (DZD) and the German Centre for Lung Research (DZL) at Heidelberg University Hospital.

The research team, headed by Dr. Stefan Kopf, comprised 110 patients with long-term type 2 diabetes, 29 patients with newly diagnosed type 2 diabetes, 68 patients with pre-diabetes and 48 non-diabetic patients (controls). The study participants were examined for metabolic control, diabetes-related complications, breathlessness, and lung function. It

was found that people with type 2 diabetes are significantly more likely to suffer from breathlessness and RLD than the control group. RLD was found in 27% of patients with long-term type 2 diabetes, in 20% of patients with newly diagnosed diabetes, and in 9% of patients with pre-diabetes. Patients with pronounced symptoms and RLD also showed CT-morphologically a fibrosating interstitial lung disease. There were also differences in the morphological analysis of the lung tissue of subjects with and without diabetes. Patients with diabetes had increased pulmonary fibrosis.

In addition, the study showed that RLD is associated with albuminuria. In the disease, urinary albumin levels are elevated. This may be an indication that lung disease and kidney disease may be associated with diabetic kidney disease (nephropathy).

“Increased breathlessness, RLD, and interstitial lung anomalies can be associated with type 2 diabetes,” said first author Stefan Kopf, MD, of the Department of Endocrinology, Diabetology and Clinical Chemistry at University Hospital Heidelberg, summarizing the study results. “In this study, the prevalence of RLD was 20 to 27 percent in patients with diabetes. Moreover, the radiological and histological analyses suggest an association with fibrosing interstitial lung anomalies,” added Professor Hans-Ulrich Kauczor, MD, Medical Director of Diagnostic and Interventional Radiology at University Hospital Heidelberg.

“The current study as well as findings from animal experiments show a significant connection between restrictive lung diseases and diabetes mellitus,” said Professor Michael Kreuter, MD, of the Thorax Clinic / University Hospital Heidelberg. “We therefore suspect that lung disease is a late consequence of type 2 diabetes,” said last author Professor Peter P. Nawroth, MD, medical director of the Department of Endocrinology, Diabetology and Clinical Chemistry at University Hospital Heidelberg and member of the Scientific

Advisory Board of the DZD. Patients with diabetes, nephropathy and breathlessness should therefore be examined regularly for RLD.

Source:

<http://dzd-ev.de/en/latest/news/news/article/high-prevalence-of-restrictive-lung-disease-in-people-with-type-2-diabetes/index.html>