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UNIVERSITÄT BERN

Media release

November 18, 2021

Research

Dangers of silent atrial fibrillation in diabetes

In a major study, a research group at Inselspital, Bern University Hospital and the University of Bern investigated atrial fibrillation (AF) in people with and without diabetes. Patients with diabetes were found to have significantly more frequent, silent (asymptomatic) atrial fibrillation. Cardiovascular problems such as hypertension, myocardial infarction, and stroke occur more frequently in diabetic patients with atrial fibrillation and the quality of life is poorer. Because of the more frequent, asymptomatic atrial fibrillation and more severe concomitant diseases, the researchers raise the question of whether patients with diabetes should be systematically screened for atrial fibrillation.

Atrial fibrillation is the most common cardiac arrhythmia. In people under 40 years of age, it occurs in about 5 out of 1000 people. This figure rises to more than 100 per thousand in persons over 80 years of age. Atrial fibrillation is categorized into phenotypes according to the duration of occurrence (only transiently present or persisting) as well as the perception by the affected person (symptomatic / asymptomatic). It is well known that diabetes is a risk factor for cardiovascular disease and for neurological disease. It was unclear how the different phenotypes of atrial fibrillation occur in individuals with or without diabetes. The research team further investigated concomitant cardiovascular/neurological diseases (comorbidities) and collected data on the quality of life.

Surprising result: persons with diabetes perceive atrial fibrillation less often

Patients usually notice atrial fibrillation because of an irregular and rapid heartbeat. Much to the surprise of the researchers, however, the study showed that atrial fibrillation occurs much more often unnoticed, meaning without clear symptoms, in people with diabetes than in the comparison group. First author **PD Dr. Arjola Bano**, researcher at the Institute of Social and Preventive Medicine at the University of Bern and the Department of Cardiology at Inselspital clarifies: *"This result is important for those affected, for it can be assumed that atrial fibrillation in people with diabetes might be overlooked or not examined. This means that the necessary preventive measures, such as blood thinning, cannot be initiated in time. The risk of consequential damage, for example, a stroke, increases."*

More concomitant diseases: high blood pressure, heart attack, stroke
The group with diabetes is characterized by an increased proportion of people with high blood pressure, heart attack (myocardial infarction) and heart failure. More specifically, individuals on insulin therapy, i.e., with an advanced, severe form of diabetes, suffered heart attacks and heart failure more frequently.
Neurological problems also showed a similar result. Compared with non-diabetics, people with diabetes suffered a stroke and brain damage more often.

Major study as part of the Swiss-AF cohort
This analysis from the Swiss-AF study, supported by the Swiss National Science Foundation, evaluated 2411 individuals with AF and complete data on symptoms, quality of life and neurological comorbidities. A total of 420 patients (17.4%) had a diagnosis of diabetes. The mean age was approximately 73 years.

Important conclusions from an interdisciplinary point of view
The present publication underlines the importance of interdisciplinary work. Diabetes is increasingly proving to be a crucial component of numerous diseases. Although the blood sugar disease has been known for a very long time – we are celebrating 100 years since the discovery of insulin – numerous new findings have been added recently. Prof. Dr. **Christoph Stettler**, Director and Chief Physician, Department for Diabetology, Endocrinology and Metabolism (UDEM) states: *"Inselspital has greatly intensified research in the field of diabetes over the last five years. If future studies confirm the hypothesis, that asymptomatic atrial fibrillation occurs more often in people with diabetes, novel strategies to systematically detect atrial fibrillation at an earlier time-point would be needed."*

Follow-up studies in the planning stage
The innovative approach of the study was to separately investigate the phenotypes of atrial fibrillation in the group of diabetic patients. Study leader Prof. Dr. med. **Tobias Reichlin**, Deputy Chief Physician, Department of Cardiology, explains: *"The collaboration between the fields of cardiology, neurology and diabetology not only yields new scientific findings, but above all practical benefits for patients. A follow-up study in diabetic patients with implantable cardiac monitors as ongoing screening for atrial fibrillation could give us further insights into the disease and, above all, possible treatments."*

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- Prof. Dr. med. Tobias Reichlin, Deputy Chief Physician, Department of Cardiology, Head of Rhythmology and Cardiac Electrophysiology, Inselspital, Bern University Hospital

Links:

- Original publication: Association of Diabetes With Atrial Fibrillation Phenotype and Cardiac and Neurological Comorbidities: Insights From the Swiss-AF Study | Journal of the American Heart Association (ahajournals.org). https://doi.org/10.1161/JAHA.121.021800

- Institutions, Organizations

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