

Electrical atrial vulnerability and renal complications in type 2 diabetes

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Abbreviation

AF Atrial fibrillation

To the Editor: We read with interest the recently published article by Zethelius and colleagues in *Diabetologia*, which studied characteristics of type 2 diabetes patients contributing to atrial fibrillation (AF) risk in a very large observational cohort [1]. The modifiable risk factor, albuminuria, was found to be strongly associated with AF in type 2 diabetes. Zethelius et al claim that microalbuminuria and macroalbuminuria, as risk factors for AF in diabetes, have not been described previously in the literature; this is incorrect, in our opinion.

AF is the most common sustained cardiac arrhythmia. Diabetes contributes to an increased risk for AF, which has been estimated to be from 26 to over 100% higher in patients

with diabetes than in non-diabetic people [2]. The mechanisms underlying this association remain largely unknown. Interestingly, prolonged P-wave duration on the ECG, considered to be an intermediate indicator of the accumulation of insults that ultimately leads to AF, has also been reported to be increased in patients with diabetes, even in those without ischaemia, hypertension or left ventricular hypertrophy [3].

Reduced kidney function and the presence of albuminuria were found to be predictive of AF in Atherosclerosis Risk in Communities (ARIC) study participants [4]. Microalbuminuria has also been linked to AF in a population of more than 20,000 hypertensive patients [5]. In the Action in Diabetes and Vascular Disease: Preterax and Diamicron MR Controlled Evaluation (ADVANCE) study, which included more than 11,000 patients with type 2 diabetes, Du et al showed that patients with AF had higher levels of blood pressure and albuminuria [6]. Finally, studying 2,671 type 2 diabetes patients originating from the SURDIAGENE (Survie, Diabete de type 2 et Genetique) and DIAB2NEPHROGENE (Diabete de type 2, Nephropathie et Genetique) cohorts, our group

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showed that albuminuria was strongly linked to prevalent AF and prolonged P-wave duration [7].

The association in type 2 diabetes between impaired renal function and/or albuminuria on the one hand and AF on the other is actually already well described, and urinary albumin should be tested as an indicator of atrial tissue damage in future studies, potentially leading to interventions such as more stringent monitoring of diabetic patients with renal damage. This could allow patients at risk from AF to be more easily identified and lead to a better assessment of stroke risk in these patients.

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