



# IL-6 and risk of atrial fibrillation in chronic kidney disease

Interleukin (IL)-6, a proinflammatory cytokine and anti-inflammatory myokine, is associated with existing and new-onset atrial fibrillation (AF) in patients with chronic kidney disease (CKD). This finding comes from an analysis of 3,762 adults with CKD in the Chronic Renal Insufficiency Cohort (CRIC).

At baseline, 642 patients reported a history of AF, but the arrhythmia was detected in only 44 patients by electrocardiography. The investigators measured plasma levels of various inflammatory biomarkers: C-reactive protein, fibrinogen, IL-1, IL-1 receptor antagonist, IL-6, transforming growth factor  $\beta$ , and tumour necrosis factor. After adjustment, only the plasma level of IL-6 was significantly associated with the presence of AF at baseline (OR 1.61, 95% CI 1.21–2.14,  $P = 0.001$ ).

During follow-up (mean 3.7 years), 108 patients developed new-onset AF. Again, of all the inflammatory biomarkers measured, only plasma IL-6 level was, after adjustment, significantly

associated with new-onset of the arrhythmia (OR 1.25, 95% CI 1.02–1.53,  $P = 0.03$ ).

IL-6 is a pleiotropic cytokine with diverse biological functions. IL-6 has been associated with left ventricular hypertrophy and systolic dysfunction, as well as the initiation and perpetuation of AF in patients with coronary artery disease and after CABG surgery. “Plasma IL-6 level is an independent and consistent predictor of AF in patients with CKD,” conclude the investigators. “Elevated IL-6 may be useful in risk stratification and also as a potential therapeutic target in the management of high risk CKD patients.”

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**ORIGINAL ARTICLE** Amdur, R. L. et al. Interleukin-6 is a risk factor for atrial fibrillation in chronic kidney disease: findings from the CRIC study. *PLoS ONE* <http://dx.doi.org/doi:10.1371/journal.pone.0148189> (2016)

**FURTHER READING** Hu, Y.-F. et al. Inflammation and the pathogenesis of atrial fibrillation. *Nat. Rev. Cardiol.* **12**, 230–243 (2015)

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