Abstract: **P1874**

**Novel predictors of atrial fibrillation progression**

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Objective: to identify predictors of progression of atrial fibrillation (AF) in patients with hypertension, coronary heart disease (CHD) and chronic heart failure (CHF) with recurrent AF.

Materials and methods. The study included 312 patients with recurrent AF. The patients were divided into 3 groups according to the leading underlying condition: essential hypertension (n=136), CHD (n=112), and CHF (n=64). The average follow-up duration was 60±3 months. ‘Progression’ of AF was defined as development of persistent or permanent AF.

Results. During the 5-year prospective follow-up in all the groups of patients with recurrent AF, progression of arrhythmia from paroxysmal or persistent to permanent form was noted. The rate of AF progression in patients with CHF was significantly higher, and its percentage was 59%. The progression percentage after 5 years was 46% (p=0.002) in patients with hypertension and 51% (p=0.008) in patients with CHD. AF progression in patients with hypertension correlated significantly with left ventricular hypertrophy (OR 1.25; 95% CI, 1.03 to 1.52) and increased vascular wall stiffness (OR 2.3; 95% CI, 1.95 to 2.65). Independent predictors of arrhythmia worsening in patients with CHD were history of myocardial infarction (OR 1.23; 95% CI, 0.9 to 1.5), irreversible left ventricular (LV) hypokinesis (OR 1.41; 95% CI, 1.1 to 1.7), and increased plasma N-terminal pro–A-type natriuretic peptide (NT-proANP) (OR 1.16; 95% CI, 0.8 to 1.4). Reduced LV ejection fraction (EF) (OR 0.84; 95% CI, 0.7 to 0.89) and increased plasma N-terminal pro–B-type natriuretic peptide (NT-proBNP) (OR 2.3; 95% CI, 1.93 to 2.67) were independent predictors of AF progression from persistent to permanent form in patients with heart failure with reduced ejection fraction.

Conclusions. Progression of AF is related to the underlying cardiovascular disease. Early vascular aging syndrome and LV hypertrophy are the main factors of AF progression in patients with hypertension. Previous myocardial infarction with irreversible hypokinesis is associated with AF progression in patients with CHD. Reduced LVEF and increased plasma BNP predict AF progression in patients with CHF.