

# Cardiovascular diseases registry (RECVASA): focus on risk factors for stroke in patients with cardiovascular comorbidities

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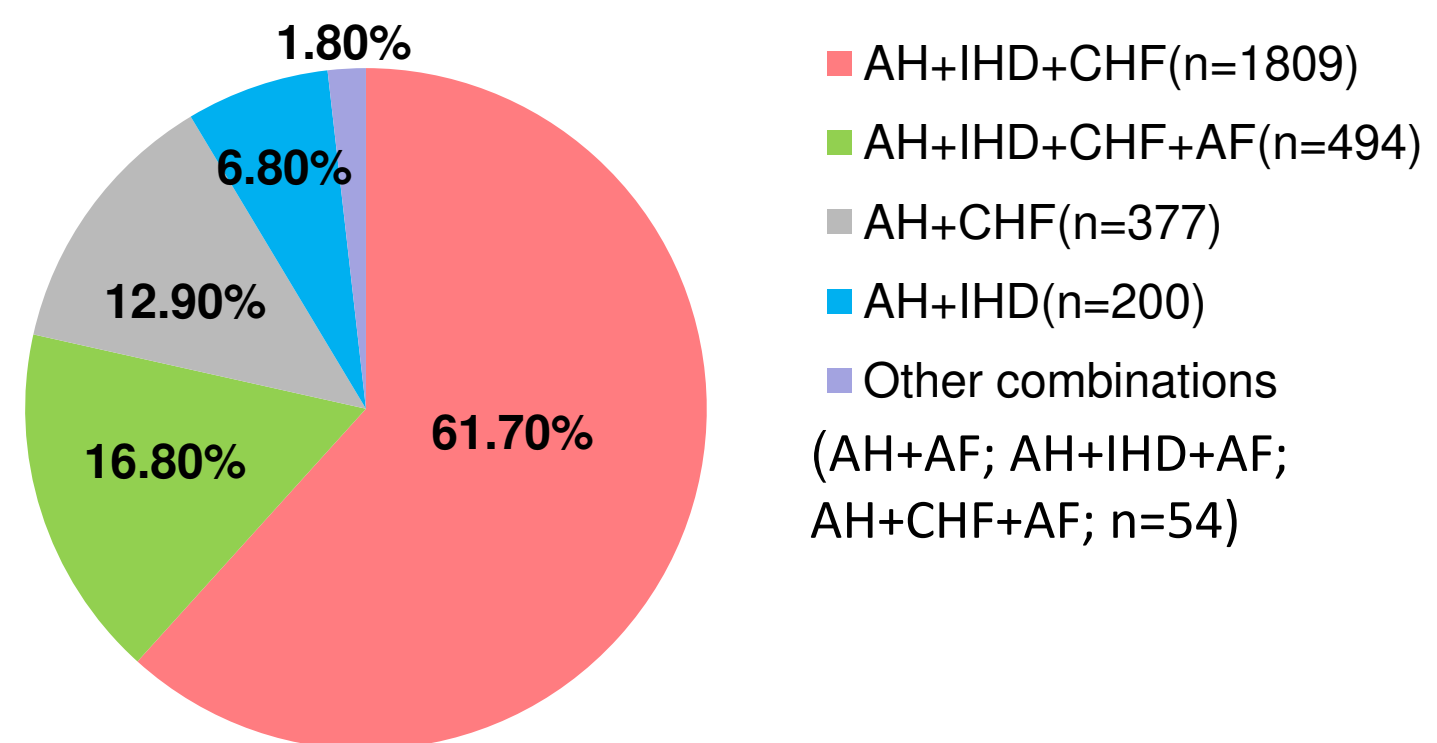


**Aim.** To evaluate the risk for stroke in comorbide patients with arterial hypertension (AH), ischemic heart disease (IHD), chronic heart failure (CHF) and atrial fibrillation (AF) enrolled in the outpatient registry RECVASA.

**Methods.** The RECVASA registry included 3690 patients with cardiovascular diseases (CVD) from 3 outpatient clinics in Ryazan region of Russia. For this analysis, we took patients with the combination of 2-4 CVD (**Picture 1**). Incidence of non-fatal stroke was estimated during 4-year follow-up period.

**Results.** 2934 patients were included in our analysis (27.7% men, age 68.5±12.9 years). 326 (11.1%) patients had history of stroke (HSTR). Mean follow-up was 3.7±0.9 years. Lost to follow-up was 4.5%. 504 (17.2%) patients died from all causes and 154 (5.2%) had non-fatal stroke (**Table 1**). Risk ratio (RR) of non-fatal stroke and 95% confidential interval (CI) were analyzed in multifactor Cox model. The next factors had an effect on risk of stroke (**Table 2**): age - 1.06 (1.05-1.08); HSTR - 3.21 (2.27-4.55); AF-1.94 (1.27-2.96); blood pressure (BP)<110/75 mmHg - 2.72 (1.02-7.31); heart rate (HR) ≥ 90/min - 2.10 (1.23-3.56); administration of ACE inhibitor (ACEI) - 0.54 (0.36-0.80). The next factors had no significant effect on risk of stroke: gender; BP ≥ 140/90 mmHg; AH; CHF (NYHA 1-2 and 3-4); IHD; history of myocardial infarction; administration of angiotensine receptor blockers, antithrombotic drugs, beta-blockers; calcium channel blockers, diuretics, statins (p>0.05).

**Picture 1. Cardiovascular comorbidity in patients of RECVASA registry**



**Table 1. Main characteristics of enrolled patients and outcomes**

Age (years)	68.5±12.9
Gender (m/w,%)	27.7/72.3
History of stroke, n (%)	326 (11.1%)
Mean number of cardiac comorbidities	3.0±0.9
Follow-up period (years)	3.7±0.9
Lost to follow-up, n (%)	132 (4.5%)
Non-fatal stroke, n (%)	154 (5.2%)
All cause mortality, n (%)	504 (17.2%)

**Table 2. Influence of different factors on the risk for stroke in patients with cardiovascular comorbidities**

Risk factors	Risk ratio (95% CI) *- p<0,01
History of stroke	3.21 (2.27-4.55)*
BP < 110/75 mmHg	2.72 (1.02-7.31)*
Heart rate (HR) ≥ 90/min	2.10 (1.23-3.56)*
Atrial fibrillation	1.94 (1.27-2.96)*
Age	1.06 (1.05-1.08)*
<b>ACEI administration</b>	<b>0.54 (0.36-0.80)*</b>

**Conclusions.** The RECVASA study revealed during 4-year follow-up period higher risk for stroke in comorbide cardiovascular patients with HSTR, AF, BP<110/75 mmHg, HR≥90/min. In patients with ACEI administration risk for stroke was 1.9 times less.