Introduction:
In standard reference sources the incidence of coronary artery disease (CAD) in patients with atrial fibrillation (AF) ranged between 24 and 46.5%. Since then the incidence of cardiovascular risk factors and CAD has dramatically increased and this trend is projected to continue. Newer studies report different incidences of CAD in patients with AF but also focus on different patient groups, so data is lacking on the overall incidence of CAD in AF patients in the modern era of cardiology. Modern treatment strategies (single oral bolus dose of flecainide and propafenone – “pill in the pocket”) are only applicable to patients without structural heart disease. It was the purpose of this study to investigate the overall incidence and severity of CAD in patients with AF.

Methods:
From January 2005 until December 2009 we included 261 consecutive patients admitted to hospital with paroxysmal, persistent or permanent AF in this prospective study. Independent of the rhythm on admission, patients with previously known AF as well as patients with diagnosed AF on admission were included. Patients with previously diagnosed or previously excluded CAD, acute coronary syndromes and dilated or hypertrophic cardiomyopathy were excluded. All patients underwent coronary angiography and the Framingham risk score (FRS) was calculated.

Results:
The overall incidence of CAD in patients presenting with AF was 34%, in patients >70 years, the incidence of CAD was 41%, the incidence of patients undergoing PCI was 21%. Patients with CAD were older (73±8 years vs 68±10 years, p=0.001), had significantly more frequent hypercholesterolemia (60% vs 30%, p<0.001), were more frequent smokers (26% vs 13%, p=0.017) and suffered from angina more often (37% vs 2%, p<0.001). Patients with stable CAD presented more often with one-vessel disease (79% vs 34%, p<0.0001). There was a significant linear trend among the FRS categories in % and the prevalence of CAD and PCI/CABG (p<0.0001). Legend: CABG = Coronary Artery Bypass Graft, CAD = Coronary Artery Disease, PCI = Percutaneous Coronary Intervention.

Conclusions:
The overall incidence of CAD in patients presenting with AF was 34%, the incidence of patients undergoing PCI was 21%. Based upon increasing CRF in the western world, we recommend a careful investigation respecting the FRS to either definitely exclude, or establish an early diagnosis of CAD - which could be contributing to an early and safe therapeutic strategy considering type Ic antiarrhythmic drugs and oral anticoagulation.