

## **The Significance of New Onset Atrial Fibrillation Complicating Acute Myocardial Infarction- Revisited**

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The prevalence of atrial fibrillation (AF) in the setting of acute myocardial infarction (AMI) varies from 5% to 23% and independently predicts in-hospital and long-term morbidity and mortality. Nevertheless, new-onset AF in this setting is still perceived as a non-recurring arrhythmia, and its long-term management is not clearly defined.

**Methods:** We identified all patients admitted to our coronary care unit between 2002 and 2009 for AMI who developed new onset AF. Cases were defined by an AF episode of > 30 seconds. The control group was an age and gender matched group of AMI patients without AF. Mortality, medication use and outcome data were collected from subsequent hospitalizations, outpatient cardiology clinics and outpatient records. Endpoints included recurrent AF, non-fatal stroke, and death.

**Results:** Of 1991 AMI admissions, new-onset AF was diagnosed in 100 (4.1%). Age of the AF patients was 70 ( $\pm 12$ ), 32% were female, 58% had an ST-elevation AMI, and 53% had moderate or worse systolic dysfunction. During the acute admission AF recurred in 33%, and 43% of the episodes converted spontaneously.

Of the 92 patients discharged in sinus rhythm, AF recurred in 11% during the first year.

In the case-control analysis, over a mean follow up of 41 months, 14% and 1% suffered a non-fatal stroke in the AF and non-AF groups, respectively ( $p < 0.01$ ). Mortality by itself did not differ significantly (35% and 29% in the AF and non-AF groups, respectively,  $p = 0.6$  by log rank).

All patients except one (99%) received anti-platelet therapy during follow up. The additional use of oral anti-coagulation therapy was a significant predictor of freedom from death and stroke ( $p = 0.04$ ).

**Conclusions:** New onset AF in the setting of AMI carries a substantial future risk for stroke, and should not be regarded as a single-occurrence, benign phenomenon. The considerations regarding long-term therapy for post-AMI AF should be the same as for AF occurring outside this setting.