

Is there a risk for ventricular fibrillation in non ST-elevation MI?

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Background: Ventricular fibrillation (VF) is the main cause of death during AMI. While VF is a well-known complication of ST elevation myocardial infarction (STEMI), its incidence in NSTEMI has not been well studied. The risk of VF among patients presenting with NSTEMI might impact their triage and need for a monitored bed.

Methods: We identified all patients admitted to the coronary care unit between 10/02 and 10/09 with a diagnosis of STEMI or NSTEMI, who initially presented with or later developed primary VF. The primary endpoint was 30-day mortality. Among patients with NSTEMI and VF we identified those who had an EKG prior to the development of VF, as opposed to those who presented with VF, in whom the diagnosis of NSTEMI was based on the absence of ST elevation on subsequent tracings. We excluded patients who developed VF during percutaneous coronary intervention.

Results: 5265 patients were admitted with AMI (STEMI & non-STEMI, 55% and 45%, respectively). VF occurred in 126 of 2888 STEMI patients (4.4%), vs. 9 of 2377 NSTEMI patients (0.4%), $P < 0.001$. Among 126 STEMI patients who developed VF, 51 (40%) presented with VF and aborted sudden death, with subsequent ST elevation on post resuscitation EKG. Among the 9 NSTEMI patients who developed VF 8 presented with aborted sudden death and had no EKG prior to arrhythmia. Four of those had chest pain prior to VF. When patients presenting with sudden death were excluded, the incidence of in hospital VF was 75/2888 (2.6%) and 1/2377 (0.04%) among patients with STEMI and NSTEMI, respectively ($p < 0.001$). None of the NSTEMI patients with VF died during 30-day follow-up. Conclusions: In contrary to STEMI patients, VF in patients presenting with NSTEMI is extremely rare. This observation might have important implications regarding triage.