

Irregular heart rhythm before or after cardiac catheterization linked to risk of death

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Certain heart attack patients who experience a rapid, abnormal heart rhythm before or after a coronary artery intervention or stent placement have a significantly higher risk of death within 90 days of the procedure, according to a study in the May 6 issue of *JAMA*.

The incidence and outcomes of sustained ventricular tachycardia or fibrillation (VT/VF; irregular, rapid abnormal contractions of the ventricles) on [patients](#) with ST elevation myocardial infarction (STEMI; a certain pattern on an [electrocardiogram](#) following a [heart attack](#)) undergoing a coronary angioplasty or stent placement (percutaneous [coronary intervention](#) - PCI) have not been well understood, according to background information in the article.

Rajendra H. Mehta, M.D., M.S., of the Duke Clinical Research Institute, Durham, N.C., and colleagues evaluated the association of VT/VF and its timing with the risk of death at 30 and 90 days in 5,745 patients with STEMI undergoing PCI at 296 hospitals in 17 countries. The patients were categorized into four groups: no VT/VF; VT/VF any time; early VT/VF, before the end of cardiac catheterization; and late VT/VF, after the end of cardiac catheterization.

Of the patients in the trial, VT/VF occurred in 5.7 percent. The majority of VT/VF episodes (90 percent) occurred within 48 hours, and 64 percent occurred before the end of catheterization. The rate of death was significantly higher in patients with any VT/VF compared with those without it (90-day death, 23.2 percent vs. 3.6 percent). Clinical outcomes

were particularly worse among patients with late VT/VF, although even those with early VT/VF had a significantly higher event rate compared with those without any VT/VF (90-day mortality for early VT/VF, 17.2 percent; and for late VT/VF, 33.3 percent; vs. 3.6 percent for patients with no VT/VF). After adjusting for various factors, the risk of death at 90 days was more than three times higher for patients with any VT/VF; more than two times higher for early VT/VF; and the risk of death at 90 days was about 5.5 times greater for patients with late VT/VF.

Among the factors associated with early VT/VF included lower systolic blood pressure, higher body weight and higher heart rate; factors related to late VT/VF included lower systolic blood pressure, higher heart rate and lack of beta-blockers on admission.

"Our analysis identified patients who may benefit from closer surveillance in the intensive care or telemetry unit after the [PCI] procedure because of the risk for late VT/VF. In contrast, because of very low risk for late VT/VF in patients with complete reperfusion [restoration of blood flow], our findings suggest that close monitoring for late VT/VF may not be necessary and these patients may be candidates for early discharge. Because currently the majority of patients with STEMI worldwide are routinely monitored for longer than 72 hours, our findings have the potential to decrease resource use without compromising patient safety when a risk-based strategy of monitoring or early discharge is followed. However, this finding also needs confirmation in future studies," the authors write.

More information: *JAMA*. 2009;301[17]:1779-1789.

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