

#ESCCongress: Insights from the TOMAHAWK Trial



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Late-breaking research presented at a hot line session at ESC Congress 2021 shows that early coronary angiography in out-of-hospital cardiac arrest (OHCA) patients without ST-segment elevation is not superior to a delayed/selective approach.

The timing and usefulness of coronary angiography in OHCA survivors without ST-segment elevation are still uncertain. Acute myocardial infarction is the cause of cardiac arrest in approximately one-third of these patients. This suggests that diagnostic coronary angiography and percutaneous coronary intervention could be beneficial.

The European Society of Cardiology (ESC) guidelines recommend delayed angiography among haemodynamically stable patients without ST-segment elevation and resuscitated after OHCA. These guidelines are based on the COACT trial, which found that an unselected immediate invasive strategy was not superior to a delayed invasive strategy.

In the new randomised open-label TOMAHAWK trial, researchers investigated whether immediate coronary angiography for treating or ruling out acute coronary events in OHCA survivors without ST-segment evaluation is beneficial for all-cause mortality at 30 days compared with intensive ICU assessment and delayed/selective angiography.

Five hundred and fifty-four patients were enrolled in the study with successful resuscitation after OHCA, possible cardiac cause of arrest and absence of ST-segment elevation on post-resuscitation ECG. Patients were randomised to receive immediate coronary angiography or initial ICU assessment with delayed angiography. The decision to perform angiography or not was left to the discretion of the treating physicians in the delayed group. The primary endpoint of the study was all-cause mortality at 30 days. Secondary endpoints included all-cause death or severe neurological deficit at 30 days, ICU length of stay, peak troponin release, myocardial infarction or rehospitalisation for congestive heart failure.

As per the findings of the trial, the primary endpoint occurred in 54% of patients assigned to the immediate coronary angiography group and 46% in the delayed/selective angiography group. All-cause death or severe neurological deficit at 30 days occurred more frequently in the immediate angiography group. No major differences were observed between the two groups for other secondary endpoints. There were also no major differences between the groups in safety endpoints.

TOMAHAWK trial

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Immediate angiography after out-of-hospital cardiac arrest

Conclusion



Early coronary angiography in out-of-hospital cardiac arrest (OHCA) patients without ST-segment elevation is not superior to a delayed/selective approach.

Impact on clinical practice



The usefulness and timing of coronary angiography in OHCA survivors without ST-segment elevation are uncertain. In up to one-third of these patients, acute MI is the cause of cardiac arrest, suggesting that diagnostic coronary angiography and potential percutaneous coronary intervention could be beneficial.

Study objectives



The TOMAHAWK trial examined whether immediate coronary angiography for treating or ruling out acute coronary events in OHCA survivors without ST-segment elevation is beneficial for all-cause mortality at 30 days compared with initial intensive care unit (ICU) assessment and delayed/selective angiography.

Overall, findings from the TOMAHAWK trial confirm the recommendations from the COACT trial that early angiography is not superior to a delayed/selective approach. Patients without a significant coronary lesion as the trigger of cardiac arrest did not need an invasive approach.

Source: [ESC](#)

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