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Abstracts

☐ CORONARY ANGIOGRAPHY AFTER CARDIAC ARREST WITHOUT ST-SEGMENT ELEVATION.

Lemkes JS, Janssens GN, van der Hoeven NW, et al.
The New England Journal of Medicine. 2019;
380:1397-1407

Out of hospital cardiac arrest is a common cause of death in both the United States and Europe and coronary artery disease is the most frequent cause of cardiac arrest. Current international guidelines recommend coronary angiography and percutaneous coronary intervention (PCI) on an immediate basis in patients who have evidence of ST-segment elevation myocardial infarction (STEMI) in the setting of cardiac arrest. These guidelines on resuscitative care also recommend the same interventions in post-arrest patients without any evidence of STEMI if they do not have an obvious non-cardiac cause of arrest. However, there is limited evidence to currently support this practice for the patients without STEMI. Current evidence consists only of observational studies with varying outcomes.

The objective of this study was to determine if there is an increased survival benefit from immediate versus delayed coronary angiography in patients who were successfully resuscitated after out of hospital cardiac arrest (OHCA) without any evidence of STEMI. Researchers conducted a prospective, randomized controlled, open-label multicenter trial in the Netherlands of patients who presented to the emergency department (ED) in participating hospitals with return of spontaneous circulation (ROSC) after OHCA. Patients eligible for the study were randomized 1:1 while in the ED to either immediate or delayed coronary angiography. The immediate angiography group received angiography, and PCI if needed, within 2 hours of being randomized. The delayed angiography group received coronary angiography and PCI after they showed neurologic recovery. The primary outcome was 90-day survival. Secondary outcomes focused on 90-day survival with good cerebral performance, defined as a score of 1 or 2 on the Cerebral Performance Category (CPC) scale), laboratory markers, as well as duration and need for various other treatments, such as ICD placement, use of vasopressors, type and location of stent placement, and type of anticoagulant use. Factors such as anticoagulant choice and revascularization technique were left to physician discretion and were also listed in the secondary outcomes.

Of the 538 patients enrolled, 273 were assigned to the immediate angiography group and 265 to the delayed angiography group. 38 patients in the delayed angiography group ended up having urgent intervention performed due to development of symptoms such as STEMI, recurrent ventricular arrhythmia, and cardiogenic shock. Baseline characteristics were similar between the two groups. At 90 days they found that there was no difference in survival between the immediate and delayed angiography groups, with an odds ratio of 0.89 (95% CI: 0.62-1.27). Similarly, there was no difference in survival with good cerebral outcomes at 90 days (OR 0.94, 95% CI: 0.66-1.31). Other outcomes such as biomarkers, markers of shock, duration of ventilation, duration of pressure support, also did not show any difference.

The authors concluded that immediate cardiac angiography and PCI does not lead to increased survival at 90 days compared to delayed angiography in patients who achieved ROSC after cardiac arrest and did not have a STEMI.

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Comment: While these European patients may differ from the patient population in the United States, this study suggests that there is no survival benefit to immediate angiography for patients without evidence of STEMI after cardiac arrest. This deviates from current practice guidelines, which recommend emergent catheterization even in patients who do not present with a STEMI. These guidelines, though, were written based on observational data. Being the first randomized controlled trial to investigate the benefit of immediate angiography, these negative findings may lead to a shift toward a more conservative approach for this patient population.

☐ BAG-MASK VENTILATION DURING TRACHEAL INTUBATION OF CRITICALLY ILL ADULTS.

Jonathan D Casey, David R Janz, Derel W. Russell et al.
NEJM. 2019; 380: 811-821

Up to 40% of tracheal intubations are complicated by hypoxemia, which increases patients' risks for cardiac arrest and death. Bag-mask ventilation (BVM) is often used to prevent hypoxemia during intubation. This technique however, may increase the patient's chance of aspiration. The risk of gastric or oropharyngeal aspiration versus the benefit of preventing hypoxemia has been debated for over many years and thus the guidelines for oxygenation during tracheal intubation remains controversial.

The goal of this randomized trial was to determine the effect of bag-mask ventilation on preventing hypoxemia between induction and tracheal intubation. Patients over 18 years who were undergoing endotracheal intubation were eligible. Exclusion criteria included being pregnant or incarcerated, needing