Timing of veno-arterial extracorporeal membrane oxygenation with cardiogenic shock

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PurposeThis study aimed to evaluate periprocedural characteristics and outcomes of acute myocardial infarction (MI) patients with cardiogenic shock supported by veno-arterial extracorporeal membrane oxygenation (VA-ECMO), comparing those who received VA-ECMO before percutaneous coronary intervention (pre-PCI) versus after PCI (post-PCI).MethodsA total of 252 acute MI patients with cardiogenic shock on VA-ECMO support between March 2013 and March 2025 were analyzed. Patients were divided into pre-PCI and post-PCI groups based on the timing of VA-ECMO initiation. The primary endpoint was in-hospital mortality.ResultsOverall, in-hospital mortality occurred in 186 patients (73.8%). There was no significant difference in in-hospital mortality between the pre-PCI (73.7%) and post-PCI (71.4%) groups (log rank p=0.935). Timing of VA-ECMO initiation was not an independent predictor of in-hospital mortality (odds ratio 0.893, p=0.873). However, major bleeding occurred significantly more often in the post-PCI group (61.9%) compared to the pre-PCI group (26.3%).ConclusionThis study concluded that early initiation of VA-ECMO before PCI is not associated with improved short-term outcomes (like in-hospital mortality) for acute MI patients with cardiogenic shock. Nevertheless, it was linked to a diminished incidence of major bleeding events.