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D-17 | Outcomes of Mechanical Circulatory Support in STEMI Patients with Cardiogenic Shock: Insights from the National Inpatient Sample

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Background: Cardiogenic shock has been associated with a high mortality rate despite advances in mechanical circulatory support. Data is inconsistent as the majority of patients in the current trials are SCAI stage E, or data is combined with heart failure and STEMI cardiogenic shock.
Methods: Data was extracted from the 2020 United States National Inpatient data set. The diagnosis criteria were "STEMI" and "Cardiogenic shock". The primary outcome of interest was comparing mortality in those patients who received mechanical circulatory support vs. those who did not in STEMI Cardiogenic shock.
Results: There were 4,302 patients with STEMI and cardiogenic shock, and 65.3% were males. The mean age was 66.7 years (SD 12.3), and the mean length of hospital stay was 7.9 days (SD 10.03). 36% of the patients died during hospital admission. 29% received an intra-aortic balloon pump (IABP), 15.5% had Impella left ventricular support, 3.2% had veno-arterial extracorporeal membrane oxygenation (ECMO), 2.2% had both IABP and Impella, 1.3% had both Impella and ECMO and 1.0% had both IABP and ECMO. The Kaplan-Meier analysis showed that IABP use was associated with decreased in-hospital mortality ($p<0.001$). In the multivariate analysis, age (OR 1.034, 95% CI 1.028-1.04, $p<0.001$), female (OR 1.26, 95% CI 1.1-1.45, $p<0.001$), acute kidney injury (OR 1.96, 95% CI 1.71-2.25, $p<0.001$), ECMO (OR 1.74, 95% CI 1.22-2.50, $p=0.003$), and Impella (OR 1.72, 95% CI 1.45-2.06, $p<0.001$) were associated with increased in-hospital mortality. Conversely, using IABP (OR 0.65, 95% CI 0.56-0.76, $p<0.001$) was associated with decreased in-hospital mortality.
Conclusions: Mechanical circulatory support devices are used individually and in combination with each other in patients with cardiogenic shock, with IABP being the most commonly used. However, in-hospital mortality remains high, but using IABP was associated with decreased in-hospital mortality. The patients with IABP were more likely SCAI stage C rather than SCAI stage E; therefore, this could have contributed to the decrease in-hospital mortality.
Disclosures: J. Mohan: Inari Medical: Speaker Bureau; Shockwave Medical: Speaker Bureau; R. Gupta, C. Umeh, P. Hotwani, G. Kaur, R. Dhawan, B. Eghreriniovo, T. Mohta, P. Mahdavian, E. Sanwo, S. Kumar, M. A. Zainea, *Nothing to disclose.*

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D-18 | Impella in Myocardial Infarction Complicated by Cardiogenic Shock: A Meta-Analysis

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Background: Despite technological advancement, mortality remains high when myocardial infarction is complicated by cardiogenic shock. Impella has been advocated as an adjunct to the standard of care but conflicting data has hindered greater utilization. We inform initial impressions of the technology with an updated meta-analysis.
Methods: We searched PubMed and Embase, screened 787 articles, and identified eleven studies that met eligibility criteria; these randomized controlled trials and cohort studies compared Impella to other mechanical circulatory support systems in patients with myocardial infarction complicated by cardiogenic shock. We evaluated groups with twenty-three metrics related to adverse events and clinical outcomes. A random effects model assessed heterogeneity between studies.
Results: We did not find a statistically significant difference between groups across all twenty-three included metrics: 30-day mortality, 6-month mortality, in-house mortality, brain death, cardiovascular death, non-cardiac mortality, successful wean, myocardial infarction, need for