**IMPELLA VERSUS INTRA-AORTIC BALLOON PUMP IN CARDIOGENIC SHOCK POST PERCUTANEOUS CORONARY INTERVENTION**

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**Introduction:** Cardiogenic shock remains a major cause of in-hospital mortality in acute myocardial infarction (MI), complicating 5-8% of MI admissions. Despite early revascularization, 1 in 3 patients will die during their hospitalization and 1 in 5 within a year after discharge. Management with vasoactive agents after revascularization can have its limitations when hemodynamic supports like Impella or Intra-aortic balloon pump (IABP) have to be used. This is a critically appraised topic with resultant analysis from multiple literature review.

**Methods:** I searched PubMed and Embase using key words:"Impella", "IABP", "high risk PCI" and "cardiogenic shock". It yielded 22 studies, 2 of them were specific to my topic.

**Results:** In a multi-center randomized clinical trial, patients with left main or triple-vessel disease and severely depressed left ventricular function were randomly assigned to IABP or Impella. Primary end point was 30-day incidence of major adverse events. Per protocol, 90-day follow-up was required. Impella provided superior hemodynamic support with maximal decrease in cardiac power output (*P=*0.001) but 30-day major adverse events was not statistically different; *P=*0.22 in intent-to-treat population and *P*=0.092 in per protocol population. Of note, at 90 days, decrease in major adverse events was observed with Impella; *P*=0.066 in intent-to-treat population and *P*=0.023 in per protocol population. In a meta-analysis study, weighed mean differences (MD) were calculated and percutaneous left ventricular assist device patients had higher cardiac index (MD=0.35 L/min/m2), higher mean arterial pressure (MD=12.8 mmHg), and lower pulmonary capillary wedge pressure (MD=25.3 mm Hg) but similar 30-day mortality as compared to IABP (RR 1.06).

**Conclusion:** 30-day incidence of major adverse events was not different with IABP or Impella. Impella does provide improved outcomes at 90 days with superior hemodynamic support and less major adverse events but it does not improve early survival. Cost of Impella is far heavier than IABP. So it has to be wisely decided based on individual case whether to choose Impella or IABP had the patient require hemodynamic support post PCI.