

# Meta-Analysis and Trial Sequential Analysis Comparing Percutaneous Ventricular Assist Devices Versus Intra-Aortic Balloon Pump During High-Risk Percutaneous Coronary Intervention or Cardiogenic Shock

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© 2018 The intra-aortic balloon pump (IABP) and percutaneous ventricular assist devices (pVAD) are commonly used in different clinical scenarios. The goal of this study was to carry out a meta-analysis and Trial Sequential Analysis (TSA) comparing the IABP versus pVAD (TandemHeart and the Impella) during high-risk percutaneous coronary intervention (PCI) or cardiogenic shock (CS). Using PubMed, Cochrane Central Register of Controlled Trials, and EMBASE we searched for randomized clinical trials (RCTs) and nonrandomized studies that compared pVAD versus IABP in patients who underwent high-risk PCI or with CS. We included 5 RCTs and 1 nonrandomized study comparing pVAD versus IABP. Based on the RCTs, we demonstrated no difference in short-term (6 months) (risk ratio [RR] 1.09, 95% confidence interval [CI] 0.79 to 1.52;  $p = 0.59$ ) or long-term (12 months) (RR 1.00, 95% CI 0.57 to 1.76;  $p = 1.00$ ) all-cause mortality. The use of pVAD seemed

associated with more adverse events (acute kidney i