*If space is a problem, could consider removing the PCI without AMI or CS data, since the point is already made via CS vs AMI, and it’s not clear that high risk PCI should be getting IABP or PVAD anyway.*

* *­­*I’ve removed the PCI data and added back the demographics data.
* The cutoffs where chosen looking at the data, seeing when outcomes diverged or converged.

**Differential survival benefit of IABPs and PVADs by procedural timing and clinical indication**

**Background**: Temporary mechanical circulatory support with intra-aortic balloon pumps (IABPs) and percutaneous ventricular assist devices (PVADs) are used to support patients in cardiogenic shock (CS) and with acute myocardial infarction (AMI). There is limited data concerning the optimal timing of placement of IABPs and PVADs, and outcomes based upon indication for placement.

**Methods**: 120,452 adult patients who received an IABP or PVAD between 2005 and 2011 and for whom information on procedural timing was available were identified in the National Inpatient Sample. We compared in-hospital mortality between PVAD and IABP by timing of placement and indication for placement (CS vs AMI vs PCI).

**Results:** IABP and PVAD were initiated for the indications of CS (n = 31,260 and 348 respectively), and AMI without CS (n = 25,977 and 339 respectively). Patients receiving IABP were older (65.1 ± 12.6 years vs. 63.9 ± 15.0 years, <students t test>),), more likely female (31.4% vs. 26.1%, chisq test), and more likely Caucasian (66.7% vs. 73.9%, chisq test) than PVAD patients. The median hospital length of stay for both IABP and PVAD patients was 8 days (range: 0-261 days vs. 0-81 days), and the majority of IABPs and PVADs were placed on the first day of hospitalization (60.0% vs. 51.0%; range: 0-197 days vs. 0-82 days). In patients diagnosed with CS, IABP patients had increased mortality compared to PVAD patients when support was placed on hospital day 0 or 1 (30.2% vs. 20.5%, p = 0.01). This difference was not present when support was placed > 1 week post admission (33.8% vs. 34.1%, p = 0.96). In patients diagnosed with AMI without CS, IABP patients had decreased mortality compared to PVAD patients when placed on hospital day 0 or 1 (10.7% vs. 32.9%, p = 0.0001), and difference also disappeared when the devices were placed > 1 week post admission (26.8% vs. 27.5%, p = 0.91).

**Conclusions**: The survival benefit of IABPs versus PVADs is influenced by the timing of the procedure and the clinical indication for placement.