

Introduction The Impella (Abiomed Europe GmbH) is a catheter mounted micro-axial flow pump, designed for mechanical circulatory support. The PROTECT II and ISAR-SHOCK trials demonstrated the benefit of the impella in Complex Percutaneous Coronary Intervention (CPCI) and Cardiogenic Shock (CS) respectively. We present data analysis of all Impella devices inserted at our centre.

Methods We retrospectively collected outcome data on all patients with Impella insertion from 2008 to 2012. There were two main groups identified; elective device insertion for CPCI, and those requiring the device for emergency CS. In-hospital deaths and Major Adverse Cardiac Events ((MACE) which includes death, myocardial infarction, stroke and target vessel revascularisation) were retrospectively collected on consecutive patients at 30 days, 6 months and 1 year.

Results A total of 22 Impella (21 were 2.5 l/min devices and 1 was a 5 l/min) devices were inserted. 12/22(55%) patients had a device inserted electively for CPCI and 10/22(45%) patients for emergency CS. Of those with CS, six were post acute myocardial infarction, two for post-operative cardiogenic shock and one patient had a device inserted for severe non-ischaemic cardiomyopathy. The overall total number of in-hospital deaths was 9/22 (41%). The CPCI group had 1/12 (8%) and the CS group had 8/10 (80%) in-hospital deaths. All patients in the CS group had died by 1 year. The MACE event for the CPCI group was 1/12 (8%) at 30 days, 4/12 (33%) at 6 months and 5/9 (56%) at 1 year. This included one death, two strokes, two myocardial infarctions and one target vessel revascularisation.

Discussion This is one of the largest recorded UK single centre registry on impella use. The survival in CS patients is lower than those obtained by multiple centre registries. These data represent 'real world' use of the Impella device at our centre, compared to perhaps more selective use in larger multi centre registries. The mortality rate in the CPCI group was 8%, which is comparable with the 30-day mortality event rate of obtained via the multiple centre Europella registry. One year MACE was very high for both groups, and this is indicative of the adverse risk profile of this subgroup of patients. These outcomes are difficult to compare to previous studies where long-term follow up has not been reported.