CONCLUSIONS Implantation of an Impella pump is performed more frequently in cardiogenic shock patients. Our preliminary data emphasize the impact on early improvement in hemodynamic parameters and rapid lowering of lactate levels. Consequent and early use of a microaxial pump in left-ventricular failure significantly contributes to improved survival.

CATEGORIES CORONARY: Hemodynamic Support and Cardiogenic Shock

KEYWORDS Cardiogenic shock, Impella, Left ventricular assist device

TCT-189 The Use of Mechanical Circulatory Support Devices during TAVR: A Single Center Experience with Long Term Follow-up

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BACKGROUND

High-risk surgical patients for transcatheter aortic valve replacement (TAVR) represent an emerging population, which may benefit from short-term use of mechanical support devices (MSD). We assessed outcomes of TAVRs performed with elective or emergent “bail-out” placement of MSD.

METHODS

All patients undergoing TAVR at a high volume academic center who required MSD during index procedure between the years 2008-2015 were included.

RESULTS

MSD were used in 12.4% (59/475) of all TAVRs (n=56 Edwards Sapien) of which 70% (n=41) were used as part of a planned strategy, and 30% (n=18) were used in “bail-out” situations. 25% (15/59) required cardiopulmonary resuscitation and 14% (8/59) required a second device (Impella or cardiopulmonary bypass, CPB after intra-aortic balloon pump, IABP). Mean STS was 10 ±2.66%, 86% had multivessel coronary artery disease and 69% underwent transapical TAVR. IABP (81%) was the most commonly used device followed by CPB and Impella. MSD were placed electively in patients with severe left ventricular dysfunction undergoing concomitant coronary intervention or balloon valvuloplasty whereas “bail-out” indications were procedural complications including cardiac arrest (VT/VF) (n=5), refractory hypotension (n=5), cardiac tamponade (n=2), severe aortic insufficiency (n=2), stone heart or LV failure (n=2), valve embolization (n=1), and left main obstruction + PCI (n=1). Mean duration of support was 1-day and device related complications were low (3%). In-hospital mortality in this extremely high risk population was 17% (8% for elective cases and 44% for emergent cases) compared to 5% in patients without MSD use (control group). Cardiogenic shock (50%) was the most common cause of in-hospital death followed by respiratory and multi-organ failure. The cumulative all-cause mortality at one-year follow-up was 71% (90% for elective and 50% for emergent cases) (Figure 1).

CONCLUSIONS Use of MSD in TAVR is associated with a significantly high mortality rates. The dismal long-term survival especially in the elective MSD group raises concerns about the use of MSD and perhaps futility of TAVR in this high-risk patient population.

CATEGORIES CORONARY: Hemodynamic Support and Cardiogenic Shock

KEYWORDS Mechanical circulatory support, Mortality, TAVR

TCT-190 Virtual 5-French Intra-Aortic Pumping using a Glidesheath Slender and 6-French Intra-aortic Balloon Catheter

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BACKGROUND The 6-Fr Glidesheath Slender that has a thinner wall structure and the same outer diameter compared to the conventional 5-Fr introducer has been introduced for trans-radial coronary intervention. The aim of this study was to evaluate the feasibility and safety of the 6-Fr Glidesheath Slender for use with the 6-Fr intra-aortic balloon pump (IABP) catheter.

METHODS Between May 2014 and March 2015, 24 patients with acute coronary syndrome underwent percutaneous coronary intervention using a 6-Fr IABP catheter with a balloon volume of 30 ml through a 6-Fr Glidesheath Slender for support. The adverse events, including access site complications, kinking of the sheath during the procedure, and any evidence of balloon pump failure, were retrospectively investigated.

RESULTS Insertion of the IABP catheter through either the femoral or brachial artery was successful in all patients. The mean support time was 32.4 ± 22.0 h. No major hemorrhagic event or severe limb ischemia was observed. Kinking of the shaft occurred during insertion in one patient; however, the subsequent balloon pumping was well maintained and did not require exchange of the sheath or IABP catheter. No kind of IABP failure was observed.

CONCLUSIONS Although this sheath was originally designed to allow radial access, our results suggest that the use of the Glidesheath Slender is feasible for insertion of the 6-Fr IABP catheter through the brachial and femoral arteries, and may reduce vascular complications in patients who undergo percutaneous coronary intervention.