Dokumenttyp: journal article

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Titel des Beitrags: A randomized clinical trial to evaluate the safety and efficacy of a percutaneous left ventricular assist device versus intra-aortic balloon pumping for treatment of cardiogenic shock caused by myocardial infarction.

Abstract: OBJECTIVES: The aim of this study was to test whether the left ventricular assist device (LVAD) Impella LP2.5 (Abiomed Europe GmbH, Aachen, Germany) provides superior hemodynamic support compared with the intra-aortic balloon pump (IABP). BACKGROUND: Cardiogenic shock caused by left ventricular failure is associated with high mortality in patients with acute myocardial infarction (AMI). An LVAD may help to bridge patients to recovery from left ventricular failure. METHODS: In a prospective, randomized study, 26 patients with cardiogenic shock were studied. The primary end point was the change of the cardiac index (CI) from baseline to 30 min after implantation. Secondary end points included lactic acidosis, hemolysis, and mortality after 30 days. RESULTS: In 25 patients the allocated device (n = 13 IABP, n = 12 Impella LP2.5) could be safely placed. One patient died before implantation. The CI after 30 min of support was significantly increased in patients with the Impella LP2.5 compared with patients with IABP (Impella: DeltaCI = 0.49 +/- 0.46 l/min/m²; IABP: DeltaCI = 0.11 +/- 0.31 l/min/m²; p = 0.02). Overall 30-day mortality was 46% in both groups. CONCLUSIONS: In patients presenting with cardiogenic shock caused by AMI, the use of a
percutaneously placed LVAD (Impella LP 2.5) is feasible and safe, and provides superior hemodynamic support compared with standard treatment using an intra-aortic balloon pump. (Efficacy Study of LV Assist Device to Treat Patients With Cardiogenic Shock [ISAR-SHOCK]; NCT00417378).