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The use of VA-ECMO in the cathlab: STEMI and high risk percutaneous coronary interventions

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Purpose: High risk PCI (e.g. unprotected left main, last remaining vessel, complex bifurcation lesion, CTO, impaired left ventricular function) can cause haemodynamic instability. VA-ECMO is an emerging technique for cardiopulmonary support in high risk PCI however outcome is unclear.

Methods: A multi-centre registry of all patients undergoing high risk PCI and receiving VA-ECMO for cardiopulmonary support.

Results: A total of 14 patients (92% (13/14) male, median age 69.5 (53-83)) of which 50% (7/14) had previous coronary artery disease in the form of CABG (36% (5/14)) and PCI (14% (2/14)) underwent high risk PCI and received prophylactic VA-ECMO support. The main target lesion was a left main in 78% (11/14) a LAD in 14% (2/14), a RCA in 7% (1/14) and 71% (10/14) underwent multi vessel PCI in addition to main target vessel PCI. The median SYNTAX score was 27.2 (8-42.5) and in 64% (9/14) there was a CTO lesion. LV function was mildly impaired in 7% (1/14), moderately impaired in 14% (2/14) and severely impaired in 64% (9/14). Cannulation was femoral-femoral in all patients. Median ECMO run was 2.57 hours (1-4). Survival was 86% (12/14). Two patients died during hospitalization due to refractory cardiac failure. All other patients survived to discharge. Complications occurred in 14% (2/14) with one patient developing a TIA post ECMO and one patient developing a thrombus in the femoral vein used for ECMO cannulation.

Conclusion: VA-ECMO in high risk PCI is feasible with good outcome. It can be successfully used for cardiopulmonary support in selected patients.

Biography

F S van den Brink received his MD from the University of Amsterdam. He completed his cardiology training at the St. Antonius Ziekenhuis in Nieuwegein, the largest referral hospital in the Netherlands. He completed a fellowship in ECMO/AICU at the Royal Brompton Hospital in London. Currently, he is a fellow of Interventional Cardiology at the Medisch Centrum Leeuwarden. He has been a speaker on numerous congresses, domestic and abroad and has authored articles on a range of subjects. His main research focus is the use of ECMO for the treatment of cariogenic shock.

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