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Extracorporeal Membrane Oxygenation Services

14:30 Convention Hall A

Extracorporeal Membrane Oxygenation in Cardiological Practices*Chan KT**Cardiac Catheterization Laboratory, Queen Elizabeth Hospital, Hong Kong*

A wide range of patients with acute coronary syndrome, myocarditis, severe valvular heart diseases and cardiomyopathy can present acutely with fulminant heart failure or cardiogenic shock, resulting in a very high mortality and morbidity. It is very important to provide temporary support of the hemodynamic and oxygenation status of these patients to allow adequate time for definitive treatment and recovery of the diseased organs. Inotropic drugs (adrenaline, noradrenaline, dobutamine, dopamine) have severe limitation in their efficacy and associated side effects. Intraaortic Balloon Counterpulsation (IABP) with the helium-filled balloon put in the descending aorta, can reduce the afterload and improve the perfusion to the major organs. However, recent clinical trials have failed to show any significant improvement in outcomes of these patients. Extracorporeal Membrane Oxygenation (ECMO) has been used in these critically ill cardiac patients and can be an effective alternative therapy.

There are essentially two types of ECMO systems — Veno-Arterial (VA) or Veno-Veno (VV) ECMO systems. VV ECMO does not provide circulatory support and usually used for patients with severe respiratory system disorders. VA ECMO draws deoxygenated blood from the right atrium or central veins, then passes through the artificial membrane oxygenator and then returns to the patient through the arterial catheter. The VA ECMO system can support the circulation up to 5L per minute and is effective in patients with severely impaired myocardial function. It is also a very effective life saving modality to rescue patients who develop catastrophic complications in the cardiac catheterisation laboratory. Common complications of ECMO include infection, thromboembolism; bleeding and vascular access and limbs complications. The insertion of a 7F or 8F reperfusion catheters to the lower limb after ECMO can improve circulation to the extremities and significantly reduce the ischemic and amputation rate. Colleagues from Queen Mary Hospital have applied a multidisciplinary approach with joint efforts of intensive care clinicians, cardiologists and Accident and Emergency Department (AED) specialists and initiate VA ECMO therapy in AED for selected patients with out-of-hospital cardiac arrest. This can improve the successful resuscitation of these very ominous patients and expand the scope of ECMO services in our locality.