Extra Corporeal Membrane Oxygenation in Adults

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Objective: The use of extra corporeal membrane oxygenation (ECMO) in children is widespread. However, its use in adults is less frequent. ECMO can be the only hope for patients with severe respiratory and/or cardiac failure that are anticipated to be reversible. We describe our recent experience as a referral center for adult ECMO for both respiratory and cardiac failure.

Methods and Results: Between October 2008 and October 2010 we used 42 ECMO in 38 patients (2 patients received ECMO in 2 intervals, 2 patients were transferred from Veno-Veno ECMO (VV ECMO) to Veno-Arterial ECMO (VA ECMO). Indications for support were cardiac in 23 patients (myocarditis-5, acute myocardial infarction-4, post cardiotomy-4, other-10), and respiratory in 15 patients (H1N1-5, trauna-3, pre lung transplant-3, other-4). Median support time was 5 (range 1 – 21) days in the cardiac group and 7 (range 4 – 21) days in the respiratory group. Sixty eight percent and 53% of patients were weaned from cardiac and respiratory ECMO, respectively. Thirty days and 1 year actuarial survival was 61% and 48% for cardiac patients, respectively, and it was 50% and 50% for respiratory patients, respectively. Complications included severe bleeding in 2, cerebral hemorrhage in 1, technical issues in 2, infections related to ECMO in 3, and limb ischemia in 1. Further analysis of data revealed that late referral for ECMO was associated with worse outcome.

Conclusions: ECMO is the last option for patients with fulminant otherwise reversible cardiac or respiratory failure. Its application may save life of patients who otherwise would die. With relatively low complication rate, earlier referral for ECMO is important to save more life.