

Outcome of Acute Myocarditis: A Single-Center 8-year Experience

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Introduction : Acute myocarditis can result in a rapidly progressive and often fatal course in children. There are still very few reports regarding the prognosis of this disease. We report our single institutional experience including treatment with extracorporeal membranous oxygenation (ECMO) in children with acute myocarditis.

Methods: All patients admitted to our institution with a diagnosis of acute myocarditis from 2002 to 2010 were retrospectively reviewed. The diagnosis of acute myocarditis was made by clinical history, clinical findings, and/or endomyocardial biopsy findings.

Results: A total of 30 events in 29 children (one patient suffered twice) were identified with acute myocarditis. The median age was 4 years (range 0 days – 11 years). Presenting symptoms included: abdominal pain and/or vomiting (12/30), episodes of change in consciousness (seizures, drowsiness or syncope) (12/30), fatigue (4/30), and upper respiratory symptoms (3/30). The mean left ventricular ejection fraction (LVEF) was 30% at presentation. Intravenous inotropic support was required in all patients and 28/30 were mechanically ventilated. ECMO was implanted in 11 cases. Median duration of device therapy was 6 days (range 3– 9 days). The survival rate in patients who required ECMO and in those who did not was 72% (8/11) and 89% (17/19) respectively, resulting in an overall survival rate of 82% (25/30). ECMO was withdrawn in 3/11 with severe brain damage as the indication in all 3 cases. These 3 death cases in the ECMO group all required cardiopulmonary resuscitation prior to ECMO implantation. The remaining 8 cases were all successfully weaned off from ECMO without any major complications. All survivors are currently alive with normal left ventricular function and no neurological sequelae.

Conclusions: Despite severe presentation, the outcome of acute myocarditis in children is favourable, with a survival rate of 82% in this series. ECMO is a highly effective form of mechanical circulatory support, and a bridge to recovery can be anticipated in the majority of these patients with excellent prospects for eventual recovery of myocardial function. Early diagnosis and short duration from cardiogenic shock to implantation of ECMO is crucial for further improvement in prognosis.