Introduction: It is thought that patients with cardiomyopathy have an increased risk of cardiac arrest on induction of anesthesia but there is little available data. The purpose of this study was to identify the incidence and potential risk factors for cardiac arrest upon induction of anesthesia in children with cardiomyopathy in our institution.

Methods: A retrospective chart review was performed. Eligible patients included patients admitted between 1998-2008 with the International Statistical Classification of Disease code for cardiomyopathy (ICD-9 code 425) who underwent airway intervention for sedation or general anesthesia in the Operating Room, Cardiac Diagnostic and Interventional Unit (CDIU) or Intensive Care Unit. Patients undergoing emergency airway intervention following cardiovascular collapse were excluded. For each patient we recorded patient demographics, disease severity, anesthesia location and anesthetic technique.

Results: One hundred and twenty-nine patients with cardiomyopathy underwent a total of 236 anesthetic events and four cardiac arrests were identified. One was related to bradycardia (HR < 60), two were attributed to bradycardia in association with severe hypotension (systolic blood pressure < 45) and the fourth arrest was related to isolated severe hypotension. Two occurred in the Operating Suite and two in the CDIU. There was no resulting mortality. One patient progressed to heart transplantation. Multiple combinations of anesthetic drugs were used for induction of anesthesia.

Discussion: We performed a review of the last 10 years of anesthesia events in children with cardiomyopathy. We report 4 cardiac arrests in 2 patients and 236 anesthetic events (1.7 %). This is the largest review of these patients to date but is limited by its retrospective nature. The low cardiac arrest incidence prevents identification of risk factors and development of a cardiac arrest risk predictive clinical tool.