BLOOD VIRAL PCR FREQUENTLY IDENTIFIES CARDIOTROPIC VIRUSES IN PEDIATRIC PATIENTS WITH CLINICAL MYOCARDITIS OR RECENT ONSET DILATED CARDIOMYOPATHY AT TIME OF PRESENTATION

Poster Contributions
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Authors: Kathleen Simpson, Gregory A. Storch, Caroline K. Lee, Madeleine Cunningham, Kent Ward, Alan Tong, Catherine Simon, Jeffrey Delaney, Saar Danon, Charles Canter, Washington University Saint Louis, Saint Louis, MO, USA

Background: A viral etiology is the commonly accepted cause of acute myocarditis/acute onset dilated cardiomyopathy (MC/DCM) in children. The prevalence of viremia in children with MC/DCM at diagnosis is unknown. We hypothesized viral infection identified via peripheral viral blood PCR at time of presentation of acute clinical MC/DCM could identify known cardiotropic viruses in pediatric patients at a higher rate than in pediatric controls.

Methods: A total of 19 children presenting with acute onset (≤ 6 weeks from onset of symptoms) MC/DCM were prospectively evaluated for the presence of cardiotropic viruses (enterovirus, adenovirus, parvovirus B19, human herpes virus 6) as part of their initial diagnostic evaluation at time of presentation. MC/DCM was defined as the presence of an echocardiographic left ventricular (LV) shortening fraction age-specific z-score < -2 with or without an LV diastolic dimension z-score > 2. The prevalence of positive viral blood PCRs in the MC/DCM group was compared to the prevalence of these viruses in healthy pediatric controls (n=108).

Results: A respiratory or gastrointestinal prodrome was reported in 81% of MC/DCM patients. Peripheral viral blood PCR was positive in 43% (n=9) of patients for known cardiotropic viruses; enterovirus (4), adenovirus (1), parvovirus B19 (2), HHV6 (2). MC/DCM patients had a significantly higher rate of positive blood PCR for these cardiotropic viruses compared to healthy pediatric controls (43% vs. 8%, p=0.0003). In the 4 MC/DCM patients who had endomyocardial biopsies, no patients had positive myocardial viral PCR studies.

Conclusions: This pilot data suggests a variety of cardiotropic viruses are frequently observed in the blood of pediatric MC/DCM patients at a significantly higher rate than healthy children. Further studies are needed to confirm these findings and determine the relationship between evidence of viremia by peripheral PCR and MC/DCM in children.