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Assessment of Cytomegalovirus Hybrid Preventative Strategy in Pediatric Heart Transplant Patients

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Abstract

Background: Prevention strategies for cytomegalovirus (CMV) in pediatric transplant recipients are sparsely reported. A hybrid strategy that combines prophylaxis with preemptive therapy using serial CMV viral load monitoring is an emerging option. We report our clinical outcomes with a hybrid strategy in pediatric heart transplant recipients. Methods: A retrospective chart review was performed for pediatric heart transplant recipients who received a hybrid strategy of 2-4 weeks IV ganciclovir followed by serial whole blood CMV monitoringfrom 2002-2010. Subject demographics, medications, drug levels, serial CMV viral loads, intravascular ultrasound (IVUS) and angiography reports, and histopathology were collected. Descriptive statistics and patient groups were compared using Chi-square, Fisher's exact, and Wilcoxon rank sum tests. Results: Twelve females and thirteen males, ranging from 4 months to 19 years of age underwent 26 heart transplants. Mean follow-up was 39 months (range 5-94 months). Fourteen (54%) subjects were CMV D+/R-, 8 (31%) D+/R+, and 4 (15%) D-/R+. Six subjects (23%) died of complications unrelated to CMV.Median prophylaxis duration was 25 days (range 7-70 days). Ten (38%) subjects developedCMV infection; 1 subject had 2 episodes of CMV syndrome, and 1 subject had 2 episodes CMV. While six of14 patients with coronary artery vasculopathy (CAV) had prior CMV, no association was found (p=0.81).Median time to first CMV DNAemia was 2.3 months (range 9 days to 24.8 months). Median time to viral load clearance was 29 days (range 4-233 days). In addition, twenty-five D-/R- patients were transplanted and received no prophylaxis; two (8%) developed CMV infection. Conclusions: Pediatric heart transplant recipients at risk for CMV treated with a novel preventative hybrid strategy developed CMV infection, syndrome, and disease at rates similar to that reported in literature for prophylactic strategies.

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65