Contrast Patterns of Cytomegalovirus and Epstein-Barr Virus Infection in Pediatric Living-Donor Liver Transplant Recipients

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Abstract:

Objectives: Cytomegalovirus and Epstein-Barr virus remain leading causes of morbidity and mortality in the living-donor liver transplant population, particularly in pediatric patients. Herein we compare the incidence, timing, and risk factors for infection in this group. Materials and Methods: We performed a retrospective study of 344 consecutive pediatric patients who received living-donor liver transplants at Kyoto University Hospital. Patients were followed-up for maximum 7.1 ± 3.6 years (range, 0.02-13.2 y) after surgery. Results: The mean age at the time of transplant was 3.95 ± 4.75 years (median, 1.38 y; range, 0.07-17.87 y). A total of 156 patients (45.2%) developed viral infections. Of those patients, 91 (26.5%) developed cytomegalovirus infection, and 93 (27%) developed Epstein-Barr virus. Cytomegalovirus developed at 39.3 ± 34.6 days, while Epstein-Barr virus developed 3.99 ± 3.67 years after transplant. Frequent rejection attacks (hazard ratio [HR], 1.58; 95% confidence interval [CI]: 0.14-2.18; P = .006) were an independent predictor for postoperative cytomegalovirus infection, while preoperative cytomegalovirus seropositive results (HR, 1.76; 95% CI: 1.03-2.18; P = .038), short cold ischemia time (HR, 1.0; 95% CI: 0.99-1.0; P = .02), larger graft (HR, 1.3; 95% CI: 1.00-1.73; P = .047), and new cases compared to old cases (HR, 2.27; 95% CI: 1.14-4.52; P = .019) were independent predictors for postoperative Epstein-Barr virus infection. Conclusions: Extended surveillance of cytomegalovirus and Epstein-Barr virus DNAemia is recommended for pediatric patients receiving living-donor liver transplants, particularly infants who are at high risk, and especially those exposed to frequent attacks of rejection and those that receive larger grafts.

Keywords:

Hepatic grafts, Immunosuppression, Rejection, Risk factors

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