

# Post-Transplant Lymphoproliferative Disorder (PTLD) Associated EBV Viremia After Liver Transplantation in Children: Experience from Single Center

Dogan Barut<sup>1</sup>, Miray Karakoyun<sup>1</sup>, Sema Yildirim Arslan<sup>1</sup>, Bora Kunay<sup>1</sup>, Veysel Umman<sup>1</sup>, Benan Dernek<sup>1</sup>, Ezgi Kiran Taşçı<sup>2</sup>, Gözde Akkuş Kayalı<sup>1</sup>, Zümrüt Bal<sup>1</sup>, Funda Cetin<sup>1</sup>, and Aydogdu Sema<sup>1</sup>

<sup>1</sup>Ege Üniversitesi Dahili Tıp Bilimleri Bölümü

<sup>2</sup>TC Sağlık Bakanlığı Sivas Numune Hastanesi

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## Abstract

**Objective:** The most prevalent malignancy that complicates both adult and pediatric solid organ transplantation is post-transplant lymphoproliferative disorder (PTLD). This study aimed to analyze the clinical and pathological characteristics, treatments, and outcomes of EBV viremia and PTLD in pediatric liver transplant recipients. **Method:** A retrospective chart review was performed on 112 patients less than 18 years of age who underwent isolated orthotopic liver transplantation (OLT) between 2010 and 2022 at Ege University Children's Hospital. Data gathered for 1-year post-OLT included age at OLT, EBV, immunoglobulin (Ig)M/IgG status of the donor and recipient, indication for OLT, induction regimen, all immunosuppression levels, date and result of EBV polymerase chain reaction (PCR) testing, rejection episodes documented by liver biopsy, and the development of PTLD. **Result:** Forty-nine patients (43.75%) developed EBV viremia (median interval from surgery: two months, min-max 2-36), of which 43 (87.8%) grafts came from living donors, and 6 (12.2%) came from deceased donors. Nine (18.4%) patients died during follow-up, and eight (16.3%) developed PTLD. Five patients developed EBV-related disease; one child developed hemophagocytic lymphohistiocytosis; one developed aplastic anemia; and one child developed B cell lymphoma. When PTLD patients and without-PTLD patients were compared, pediatric intensive care unit hospitalization, abnormal bone marrow biopsy findings, lymphadenopathy, age at diagnosis of EBV viremia, EBV viral load, tacrolimus (FK 506) pre-infection, and 1-month levels were higher in patients with PTLD ( $p < 0.05$ ). In logistic regression analysis, we showed that the age at diagnosis of EBV viremia was significantly higher in children with PTLD ( $p = 0.045$ ; OR, 1.389; 95% CI, 1.007-1.914). **Discussion** PTLD is a rare but severe complication associated with EBV after OLT. This study demonstrated that PTLD is associated with older age, higher tacrolimus blood levels before EBV viremia, at one month of EBV viremia, and higher peak EBV viral load.

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