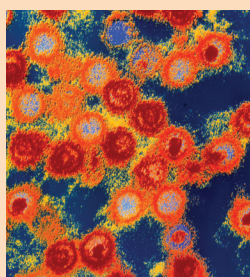


# Epstein-Barr Virus–Associated Post-Transplantation Lymphoproliferative Disorder: Potential Treatments and Implications for Nursing Practice

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**Background:** Considered to be a secondary malignancy, Epstein-Barr virus (EBV)–associated post-transplantation lymphoproliferative disorder (PTLD) is a potentially fatal complication of hematopoietic cell transplantation (HCT). With 50%–70% of all reported cases of PTLD being associated with EBV, the incidence in HCT is relatively low. However, mortality rates in this population of patients are 70%–90%.

**Objectives:** The focus of this article is to discuss published literature regarding the risk factors, clinical manifestations, diagnosis, prevention, and potential treatment options for EBV-PTLD, as well as nursing implications and the importance of patient education in high-risk HCT recipients.

**Methods:** This review of literature focused on locating, summarizing, and synthesizing data from published clinical studies that focused on treatment options, guidelines, and recommendations for EBV-PTLD. CINAHL® and PubMed databases were used to search for articles published within the past 10 years that included the following key words: *post-transplantation lymphoproliferative disorder*, *Epstein-Barr virus*, and *hematopoietic cell transplantation*.

**Findings:** Prevention and preemptive therapy are paramount when caring for patients undergoing HCT. Early determination of risk, close observation of EBV DNA levels in the blood, and prompt initiation of therapy are essential to improving patients' overall prognosis. Reduction in immunosuppression is considered first-line therapy for those diagnosed with EBV-PTLD. The literature also supports rituximab-based therapies, administration of EBV-specific cytotoxic T cells, and donor lymphocyte infusion as treatment strategies.

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One potentially life-threatening complication following solid organ transplantation and hematopoietic cell transplantation (HCT) is post-transplantation lymphoproliferative disorder (PTLD). The incidence of PTLD after HCT is relatively low (about 1%) (Al-Mansour, Nelson, & Evens, 2013). However, mortality rates in this population of patients are 70%–90% (Al-Mansour et al., 2013; Jagadeesh, Woda, Draper, & Evens, 2012; Zhong, 2012). About 50%–70% of PTLD cases are associated with Epstein-Barr virus (EBV), a common childhood virus that belongs to the family of herpes viruses and infects up to 95% of the American adult population (Jagadeesh et al., 2012; Zhong, 2012). Strategies for the prevention and treatment of PTLD remain a matter

of debate; various approaches have been attempted to avoid the high morbidity and mortality associated with the diagnosis. Treatment may include manipulation of immunosuppressive therapies, surgery, radiation therapy, antiviral medications, chemotherapeutic agents, immunotherapy, or adoptive cellular therapies (Ahmad et al., 2009).

## Post-Transplantation Lymphoproliferative Disorder Characteristics

EBV is associated with about 55%–65% of all PTLD cases (Al-Mansour et al., 2013). Latent EBV becomes a lifelong dormant