

UNDERSTANDING POST-TRANSPLANT LYMPHOPROLIFERATIVE DISEASE (PTLD)

ABOUT PTLD



PTLD stands for Post-transplant lymphoproliferative disease

Post-transplant lymphoproliferative disease (PTLD) is a type of cancer or lymphoma that may occur after bone marrow or organ transplant. [1-2]



PTLD is a rare disease

PTLD is considered a rare disorder according to the official EU definition (i.e. less than 1 in 2,000 patients in the EU) [3], that only occurs in a small percentage of transplant patients.



PTLD is life-threatening

Even though PTLD can often be treated successfully when diagnosed early, it can add medical and psychological burden to transplant patients due to its fast progression. [4-5] PTLD is also associated with other treatment-related risks such as graft-versus-host disease, organ rejection and infection. [4]

WHAT CAUSES PTLD

PTLD is often caused by EBV

EBV stands for Epstein-Barr Virus. While children do not experience any symptoms, EBV can cause mononucleosis (also known as 'mono' or kissing disease) in adolescents and adults. [6] EBV is also associated with various cancers, including PTLD. [6-8]



Approximately 90% of the world-wide adult population has life-long EBV infection. [6]

Most people have been or will be infected by EBV, but the virus remains dormant in the person's B-cells as a healthy immune system (T-cells) keeps it under control. [7,9-10]

What happens in transplanted patients?

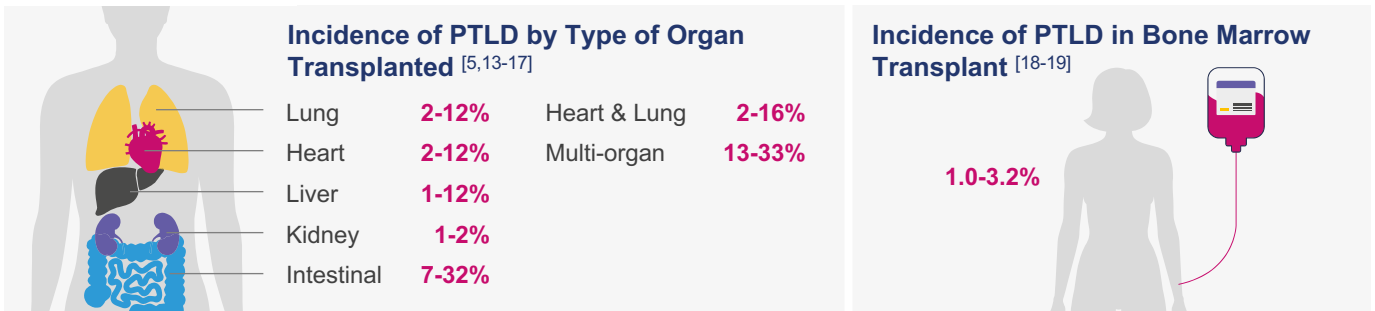
Before receiving a transplant - and throughout their life for solid organ transplants - patients receive a treatment to 'reduce' their immune system (immunosuppressive regimen) to limit the risks of rejection.

After receiving a transplant, the dormant EBV can reactivate (whether it came from the patient or the donor). [4,8] In an immunosuppressed patient, T-cells are low in number and the virus cannot be properly controlled. [11] This can lead to the rapid increase of EBV-infected B-cells, causing PTLD. [9]


PTLD can also occur in EBV negative patients but researchers do not yet understand what mechanisms are at play in these cases. [12]

PTLD IS RARE AND OCCURS IN BOTH BONE MARROW AND SOLID ORGAN TRANSPLANTS

Risks of developing PTLD are dependent on the type of transplant received




Beyond the type of transplant, other factors can increase the risks of developing PTLD




Degree of Immunosuppression [10,17]

The match between donor and patient, particularly in stem cell transplant, is an important aspect as it affects the degree of immunosuppression required. The more a patient is immunosuppressed, the greater their risk of developing PTLD.



EBV Serostatus [10,17]

PTLD can be caused either because the transplanted patient's own EBV is reactivated or because the EBV from the donor is reactivated in the patient. This causes an uncontrolled growth of cells in the patient's lymph nodes and other organs, which may result in cancer.

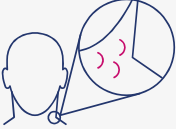


Age [10,17]


Children under 10 yo and adults over 50 yo (blood transplant) or 60 yo (solid organ transplant) are at higher risk of developing PTLD.

PTLD SYMPTOMS RESEMBLE THOSE OF OTHER CONDITIONS


Symptoms vary but commonly include: [4,8,10]




Painless lumps
(aka swollen lymph nodes) usually in the neck, armpit or groin



Fatigue




Fever



Unintentional weight loss



Night sweats



General feeling of poor health

These are not unique to PTLD and are very similar to those experienced in some other infectious diseases, or if the body were rejecting the transplant. [4,10]





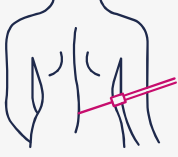
Patients who have received a transplant should pay close attention to the above-mentioned symptoms and report them promptly to their transplant team.

EARLY DIAGNOSIS IS KEY TO ENSURE A TAILORED TREATMENT PLAN CAN BE DEvised

Because of the lack of specific symptoms, PTLD may be difficult to detect and diagnose

To establish a PTLD diagnosis, doctors will rely on the following tools: [8,20]

Other tests to confirm diagnosis and/ or assess the extent of disease may include: [8,20]

 <p>Your symptoms and detailed medical history</p>	 <p>A biopsy of the lymph node or of the tumour site <small>(microscope studies and immunophenotyping to identify specific markers to help diagnose PTLD)</small></p>	 <p>Blood tests</p>	 <p>Imaging tests: CT scan, PET Scan or MRI</p>	 <p>Lumbar puncture or Bone marrow biopsy</p>
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Upon confirmation of PTLD diagnosis, the doctors will identify the best treatment course

One of the most common initial treatment strategy for PTLD is to start by reducing the immunosuppression regimen. [10,17,21,22]

There are currently no EMA-approved therapies for PTLD but treatment options are available, such as antibody therapy, chemotherapy, surgery or radiotherapy, or T-cell therapy. [7,8,17] Patients should work closely with their care team to discuss the best

treatment pathway for them.

Despite the absence of approved treatments, new therapies are currently under investigation. Patients may also talk to their doctors about being enrolled in one of the open clinical trials. More information about ongoing clinical trials is available through ClinicalTrials.gov, and [\[INSERT RELEVANT NATIONAL LINK\]](#).

UNMET MEDICAL NEED FOR PTLD PATIENTS AND THEIR FAMILIES

There remains a lot to be done to address the high unmet needs that PTLD patients, their caregivers and families, as well as healthcare professionals are still confronted with. In particular specific action should be taken to overcome the following challenges:

	<p>Lack of awareness of the disease</p> <p>PTLD is rare but we need to make sure that PTLD patients and their treatment team have access to the latest, high-quality and appropriate information.</p>
	<p>Limited treatment options after failure of standard of care</p> <p>There are no approved treatments for PTLD. Available alternatives are limited and some PTLD patients have poor treatment outcomes. There is an unmet need for additional treatments for PTLD patients who do not respond to current therapies.</p>
	<p>Emotional and physical burden for patients and their families</p> <p>For patients who have had to go through a transplant and suffered from other serious, life-threatening conditions, a PTLD diagnosis adds a medical, psychological, financial and emotional burden.</p>

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