

Diffuse Large B-cell Lymphoma

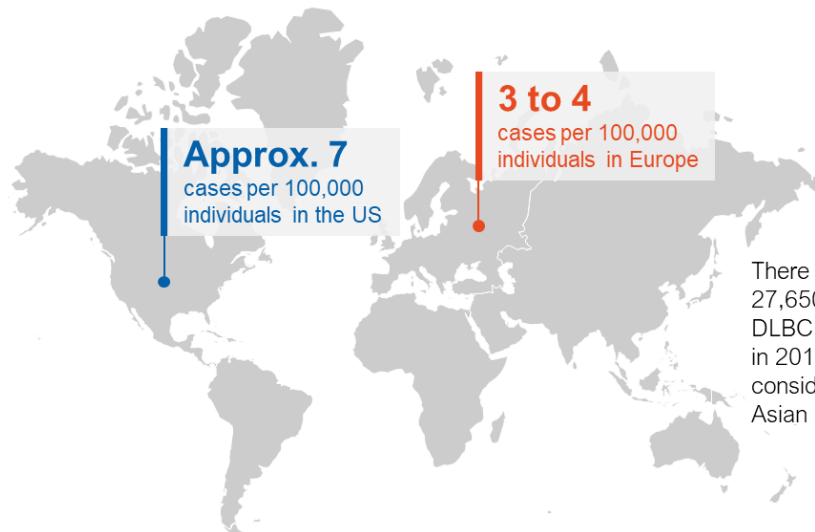
The most common form of non-Hodgkin lymphoma

Non-Hodgkin lymphoma (NHL) refers to a group of cancers of the lymphatic system that develop from the lymphocytes, a type of white blood cell involved in the body's immune system. In people with NHL, normal lymphocytes change and grow uncontrollably, accumulate and form masses (tumors), displace healthy white blood cells and weaken the body's ability to fight infection^{1,2}.

There are many different sub-types of NHL and each are unique in how they present in patients and how they should be treated. The most common is diffuse large B-cell lymphoma (DLBCL), an aggressive, complex and difficult-to-treat cancer of the B-lymphocytes (B-cells).

DLBCL can arise from follicular lymphoma, or present as "double-hit or triple-hit lymphoma," otherwise known as high-grade B-cell lymphoma.

DLBCL is the most common subtype of NHL, accounting for up to 40% of all NHL cases globally³

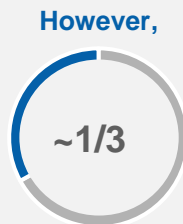


There were an estimated 27,650 newly diagnosed DLBCL patients in the US in 2016. The incidence is considerably lower in East Asian countries.

Outlook



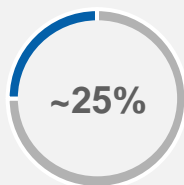
of patients with DLBCL achieve and maintain complete remission after first-line therapy².



of patients relapse after receiving first-line treatment⁴.



of patients have refractory disease⁴.



of r/r DLBCL patients are eligible for auto stem cell transplant².



If left untreated, r/r DLBCL has a life expectancy of approximately 6 months⁵.



Diagnosis

Although DLBCL does occur in children, the incidence increases with age; approximately half of DLBCL patients are over 60 years of age at the time of diagnosis⁶.

The general symptoms of DLBCL often resemble those caused by infection, such as swollen lymph nodes, fever, fatigue, weight loss and recurring night sweats⁶. The first symptom is often rapid swelling of the lymph nodes in areas including the neck, armpit or groin that may or may not be painful.

Physicians use a variety of tests to diagnose the presence of DLBCL cells, as well as to determine the subtype and stage of the disease. Staging determines how much lymphoma is spread, where it is located and whether it has remained within the lymphatic system or spread to other parts of the body. Although the majority of DLBCL cases occur in the lymph nodes, the disease involves organs other than the lymph nodes about 40% of the time⁷.

Treatment

The subtype and stage of disease can affect both prognosis and treatment choices⁶. Because it is a particularly aggressive type of cancer, DLBCL must be addressed quickly. It is important for patients to discuss all treatment options with their doctors to develop a plan that will help them reach their treatment goals.

Initial treatment typically consists of chemotherapy plus a monoclonal antibody, rituximab, and is often curative⁸. However, roughly one-third of patients relapse after receiving first-line treatment⁴. The mainstay of secondary therapy is second-line (“salvage”) chemotherapy followed by high dose chemotherapy (HDT) and autologous stem cell transplant (ASCT); however, many patients cannot proceed to ASCT because of lack of response to salvage chemotherapy, or are ineligible due to poor health status^{9,10}. Of those patients who are able to undergo ASCT, many ultimately face disease relapse. Options are limited and survival rates are low for patients who are ineligible for ASCT or for whom salvage chemotherapy and ASCT have failed⁵.

The ultimate goal of treatment for r/r DLBCL is for patients to attain durable complete remission or complete response, meaning there are no signs of cancer detectable in the patient. Other measurements of response to treatment include a partial response and the duration of response (the time between initial response to a therapy and further disease progression).

While the prognosis for r/r DLBCL patients has historically been poor, innovative approaches such as immunocellular therapy have the potential to change outcomes for patients and the way this cancer is treated.

Disease Burden



Quality of Life

Both the disease and its treatment can have a significant impact on a patient's quality of life. Compared to healthy people, patients with DLBCL experience reduced health status and physical functioning, and higher rates of anxiety and depression; even long after therapy is completed, patients may continue to feel anxious about the future of their health. Besides these problems, patients are often faced with other pre- or post-transplantation physical problems, such as neutropenia (having an unusually low number of white blood cells), infection, bleeding, fatigue, nausea-vomiting, dehydration, diarrhea and mucositis (inflammation and ulceration of the mucous membranes lining the digestive tract)^{11,12}.



Economic Burden

The direct and indirect costs of r/r DLBCL are substantial. Beyond treatment, overall healthcare resource use is high, including inpatient, ER, and with physician office visits and supportive care¹³. The economic burden is even greater for patients with r/r disease, who face significant costs for second-line procedures¹⁴. Indirect costs are also higher in this group as a result of impaired productivity, including absenteeism and short-term disability days¹⁵.

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