Ovarian Lymphoma

Primary lymphoma of the ovary is rare.

The most common presentation is of a painful abdominal or pelvic mass.

Tumors are staged using the Federation International of Gynecologists and Obstetricians (FIGO) system used for other ovarian neoplasms.

Prognosis for DLBCL of the ovary is poor with two- and five-year survival rates of approximately 40 percent.

Initial treatment usually involves bilateral salpingo-oophorectomy with or without hysterectomy;

unilateral salpingo-oophorectomy may be acceptable if there is no evidence of disease on the contralateral side after careful inspection.

Hysterectomy is not required but is often performed to prevent problems with bleeding after oophorectomy.

The authors suggest chemoimmunotherapy according to disease stage, accompanied by CNS prophylaxis.

There are no clinical trials to guide the therapy of ovarian lymphoma.

Ovarian DLBCL may be associated with systemic recurrence, including the CNS, but the actual rate of CNS involvement is unknown.

Advanced stage DLBCL

Diffuse large B cell lymphoma (DLBCL) is the most common histologic subtype of non-Hodgkin lymphoma (NHL).

It is an aggressive NHL in which survival without treatment is measured in months.

Advanced stage refers to disease that cannot be contained within one irradiation field, and accounts for 60 to 70 percent of patients with DLBCL.

Pretreatment evaluation determines the extent of the disease and provides information about the individual's comorbidities that are likely to affect treatment options.

In addition to a history and physical examination, it is our practice to perform laboratory studies, unilateral bone marrow biopsy, and imaging in all patients.

Certain subsets of patients will require further testing of their cerebrospinal fluid and cardiac function.

Fertility counseling should be offered to patients in childbearing years.

A molecular risk assessment should be performed in all cases to help determine prognosis and direct therapy.

This includes both an evaluation of **MYC, BCL2, and BCL6** status (by immunohistochemistry or fluorescence in situ hybridization [FISH]) and an evaluation of **cell of origin** (by gene expression profiling [GEP], immunohistochemistry-based algorithms, or LymphCx platform).

Germinal center B cell (GCB) DLBCL

Cases with GCB DLBCL are those identified by GEP, immunohistochemistry algorithms, or LymphCx without MYC and BCL2 gene rearrangements.

These patients have a relatively good prognosis following standard therapy with R-CHOP(6 CYCLES).

Activated B cell (ABC) DLBCL

Cases with non-GCB DLBCL without double hit DLBCL, have high relapse rates and a poor prognosis following treatment with R-CHOP.

For patients with advanced stage ABC type DLBCL, we encourage enrollment on a clinical trial evaluating the incorporation of novel agents (eg, R-CHOP plus lenalidomide; R-CHOP plus ibrutinib; R-CHOP plus bortezomib).

The more intensive R-ACVBP regimen is an acceptable alternative in practices that have access to vindesine.

Double hit DLBCL

Cases with MYC translocation plus gene rearrangement of BCL2, BCL6 (or both) have a poor prognosis with standard therapy.

These patients should be encouraged to enroll on a clinical trial.

For those treated off study, we suggest six to eight cycles of dose-adjusted EPOCH-R (etoposide, doxorubicin, vincristine, cyclophosphamide, and prednisone plus rituximab) with a goal of administering two cycles beyond attainment of a complete remission (Grade 2C).

Double expressor DLBCL

There are limited data regarding the treatment of the larger population of patients with double expressor DLBCL (immunohistochemistry identifies co-expression of MYC and BCL2, but gene rearrangements are not present or were not evaluated).

Such patients should be encouraged to enroll on a clinical trial or treated with R-CHOP off study.

DLBCL-Burkitt

DLBCL, not otherwise specified (NOS) is a category in the 2016 World Health Organization (WHO) classification that includes lymphomas with features intermediate between DLBCL and Burkitt lymphoma, but do not truly fit into either category.

The colloquial term "gray zone lymphoma" has been used in the past to include this entity.

This category of DLBCL accounts for approximately 5 percent of cases previously described as DLBCL.

Many cases with this immunophenotype are "double hit" lymphomas, and, as such, the 2016 WHO classification describes them as high-grade B cell lymphoma, with MYC and BCL2 and/or BCL6 rearrangements.

Outcomes with R-CHOP-21 are disappointing with a median OS of only 2.5 to 18 months.

In addition, the vast majority of patients with this entity are older adults (median age 70 years) and are not candidates for highly intensive therapy.

Outside of a clinical trial, we generally treat with da-EPOCH-R (dose-adjusted cyclophosphamide, doxorubicin, etoposide, vincristine, prednisone plus rituximab) given its activity in both Burkitt lymphoma and DLBCL and its reasonable tolerability.

While some experts suggest the use of aggressive combination chemotherapy regimens commonly used for the treatment of Burkitt lymphoma, such as CODOX-M/IVAC, toxicity with this regimen is severe and virtually all patients require a prolonged inpatient hospital stay and blood product support.

As such, we generally reserve the use of these intensive regimens for younger patients with a good performance status.