Journal of Pathology and Disease Biology

Extended Abstract
Vol. 3, Iss. 1
2019

Pathology 2015: Frequency of subgroups of diffuse large B-cell lymphoma by immunohistochemistry in Pakistan - Uzma Bukhari - Zia Uddin Hospital, Pakistan.

Uzma Bukhari
Zia Uddin Hospital, Pakistan

Objective: To determine the frequency of the subgroups (germinal center and non-germinal center) of diffuse large B-cell lymphoma (DLBCL) in a tertiary care hospital.

Material and methods: This is a transversal descriptive study carried out in the histopathology department, the clinical laboratories of Dr Zia Uddin Hospital Karachi. 62 cases of diffuse large B-cell lymphoma were collected during a fifteen (15) month period from April 2011 to June 2012. All the resected specimens and small biopsies were extrapolated; the sections were treated overnight and stained with hematoxylin and eosin (H&E) for morphological evaluation. The panel of lymphoid antibodies included CD20, CD79a, CD3, Ki-67 and Pax5 were used for the diagnosis of DLBCL. Then, the CD 10, BCL-6 and MUM-1 monoclonal antibodies were applied for the DLBCL subgroup.

B cell lymphomas are types of lymphomas that affect B cells. Lymphomas are "blood cancers" in the lymph nodes. They develop more frequently in the elderly and immunocompromised individuals. B-cell lymphomas include both Hodgkin's lymphoma and most non-Hodgkin's lymphomas. They are generally divided into low and high grade, corresponding respectively to indolent (slow-growing) lymphomas and aggressive lymphomas. In general, indolent lymphomas respond to treatment and are kept under control (in remission) with long-term survival of several years, but are not cured. Aggressive lymphomas usually require intensive treatment, some with a good prospect of permanent recovery.

The prognosis and treatment depend on the specific type of lymphoma as well as the stage and grade. Treatment includes radiation therapy and chemotherapy. Indolent early-stage B-cell lymphomas can often be treated with radiation therapy alone, with no long-term recurrence. Aggressive disease at an early stage is treated with chemotherapy and often with radiation, with a cure rate of 70 to 90%. Indolent advanced lymphomas are sometimes not treated and monitored until they progress. Aggressive advanced disease is treated with chemotherapy, with cure rates of over 70%.

Associated chromosomal translocations:

Chromosomal translocations comprising the substantial immunoglobulin locus (IGH @) are a typical cytogenetic abnormality for many B-cell lymphomas, including follicular lymphoma, mantle cell lymphoma, and Burkitt's lymphoma. In these cases, the heavy immunoglobulin locus forms a fusion protein with another protein that has pro-proliferative or anti-apoptotic capabilities. The enhancer of the immunoglobulin heavy locus, which functions normally for B cells to produce massive production of antibodies, now induces massive transcription of the fusion protein, resulting in excessive pro-proliferative or anti-apoptotic effects on B cells containing the fusion protein.

In Burkitt's lymphoma and mantle cell lymphoma, the other protein in the fusion is c-myc (on chromosome and cyclin D1 (on chromosome 11), respectively, which confers on the fusion protein proliferation capacity in follicular lymphoma, the fused protein is Bcl-2 (on chromosome 18), which gives the fusion protein anti-apoptotic capacities.

Types:

Computed tomography of a primary B cell lymphoma in the left ileum, in the form of a diffuse cortical and trabecular thickening of the hemi pelvis, imitating Paget's disease.

There are many types of lymphomas involving B cells. The most commonly used classification system is the WHO classification, a convergence of several older classification systems. Five represent nearly three out of four patients with non-Hodgkin's lymphoma:

This work is partly presented at 4th International Conference and Exhibition on Pathology, July 13-15, 2015 held at New Orleans, USA

• Diffuse large B cell lymphoma (DLBCL)

• Follicular lymphoma

• Marginal zone B cell lymphoma (MZL) or lymphoma of the lymphatic tissues associated with the mucous membranes (MALT)

• Small lymphocytic lymphoma (also known as chronic lymphocytic leukemia, LLC

• Mantle cell lymphoma (MCL)

The role of lymphocytes:

There are two main types of lymphocytes, but the ones that affect the development of your disease are called B cells. These cells make antibodies - proteins that help your body fight germs like bacteria and viruses.

Lymphocytes travel around your body through a network called the lymphatic system. The lymph nodes - small glands in the neck, armpits and groin - are part of this system. Lymphoma develops in the lymph nodes or in any other area of the body that has lymphatic tissue, including the spleen, bone marrow, thymus, adenoids, tonsils and stomach.

When you have B-cell lymphoma, your body produces too many abnormal B cells. These cells do not fight infections well. They can also feast to supplementary parts of your body. There are two types of lymphoma: Hodgkin's lymphoma and non-Hodgkin's. Most B-cell lymphomas are non-Hodgkin's lymphomas.

Types of B-Cell Lymphomas

When your doctor tells you about your B cell lymphoma, he will tell you what type you have. The most mutual sort of non-Hodgkin's lymphoma is termed diffuse large B-cell lymphoma (DLBCL).

Other types of non-Hodgkin B-cell lymphomas include:

• Follicular lymphoma - a slow-growing form that mainly affects the elderly

• Chronic lymphoid leukemia / small lymphoid leukemia (CLL / SLL)

• Mantle cell lymphoma - a fast growing lymphoma

• Marginal zone lymphoma - a type that has small cells that grow slowly

• Burkitt's lymphoma - a rare disease that develops quickly

• Lymphoplasmacytic lymphoma (Waldenstrom macroglobulinemia) - a rare, slow-growing lymphoma

Primary mediastinal large B-cell lymphoma - a rare type that mainly affects young adults and is more common in women

Causes of B-Cell Lymphoma:

Doctors don't know what causes most B-cell lymphomas. These cancers start when lymphocytes start to grow out of control. Usually your body makes new lymphocytes only when you need them to replace old dead cells. In B-cell lymphoma, lymphocytes cultivate once you don't need them. And they endure to reproduce.

Results: In a total of 62 cases of diffuse large B-cell lymphoma, 27 (44%) were classified as a subgroup as the germinal center and 35 (56%) were classified as a subgroup as the non-center Germinal. The age of the patients varied from 04 to 95 years. 58% of the patients were men and 42% were women with a male / female ratio of 1.4: 1. 36 (58%) cases remained further nodal and 26 (42%) were nodal lymphoma. The non-germinating center type subgroup was predominant in nodal and extra-nodal lymphomas as 15 (58%) and 20 (56%) respectively.

Biography: Uzma Bukhari completed MBBS from Liaquat University of Jamshoro Medical and Health Sciences. She completed MPhil Histopathology from the University of Karachi in Pakistan. She has completed her residency at the FCPS (Fellow of the College of Physicians and Surgeons of Pakistan) at Dr Zia Uddin Hospital in Karachi and will appear for examination this year. She currently works in the clinical histopathology laboratory of Dr. Zia Uddin hospital. She has published 10 research articles and one article has been published internationally.

This work is partly presented at 4th International Conference and Exhibition on Pathology, July 13-15, 2015 held at New Orleans, USA

Conclusion: This study reports an increase in the number of patients in the non-germinal central subgroup of diffuse large B-cell lymphoma. The male / female ratio was 1.4: 1. The average age of the patient was 45 years.

This work is partly presented at 4th International Conference and Exhibition on Pathology, July 13-15, 2015 held at New Orleans, USA