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Lymphoma: A Review on Causes and Treatments

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Editorial Article

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Introduction

Lymphocyte is a type of white blood cell, flow in Blood and originate in lymphoid organ. They play a definite role in guarding our body over both humoral and cell mediated immunity. During neoplastic change these lymphoid cell not only loose the properly to protect us but also proliferate indiscriminately and forms solid neoplasm known as Non-Hodgkin's lymphoma (NHL) or Lymphoma. These lymphoma cells when enter bone marrow and appear in blood stemmed in lymphatic leukemia. Frequent environmental and industrial chemicals are capable of causing cytogenetic damage in experimental animals. Similar effects are also observed in Human bod [3-5]. Lymphomas are a heterogeneous group of lympho-proliferative disorders of B, T or NK..

Types of Lymphoma

Extranodal non-Hodgkin's lymphomas (NHLs) represent up to 30-40% of all NHL cases [6]

Adult T-cell leukemia / lymphoma (ATL) is one of the incurable mature T-cell malignancies [1].

Hodgkin Lymphoma (HL) is the most striking example of tight tumor-host relationship [1]. About 95% of HL belongs to the classical form of the disease [2] and based on the frequencies of cellular components and histo-pathological features, it is sub-typed to four entities:

- Nodular Sclerosis Classic Hodgkin Lymphoma (NSCHL),
- Mixed Cellularity Classic Hodgkin Lymphoma (MCCHL),
- Lymphocyte- Rich Classic Hodgkin Lymphoma (LRCHL),
- lymphocyte Depleted Classic Hodgkin Lymphoma (LDCHL)

While the remaining 5% represent Nodular Lymphocyte Predominant Hodgkin Lymphoma (NLPHL) [2,3]. This lymphoma is characterized by heterogeneous cellularity, including a majority of reactive and inflammatory non-neoplastic cells and a minority of specific neoplastic cells -the multinucleated Reed Stern-berg and its mono-nucleated variants, Hodgkin and Reed- Sternberg (HRS) cells [12]

Occurrences of Lymphoma

The most common type of B-cell non-Hodgkin lymphoma (NHL) is diffuse large B-cell lymphoma (DLBCL), which has an aggressive clinical course. [7]

Acute Lymphoblastic Leukemia (ALL) is the most prevalent cancer in children [9]

Extranodal Marginal Zone Lymphoma of Mucosa-Associated Lymphoid Tissue (MALT) is a B-cell neoplasm and type of indolent, non-Hodgkin lymphoma. Although the clinical presentation and site of involvement may show considerable variation, extranodal marginal zone lymphoma has been defined by the World Health Organization as a tumor composed of a heterogeneous population of small B-cells which resemble the marginal zone B-cells of the Peyer's patches, lymph node and spleen. Despite the morphologic diversity, a significant proportion of these lymphomas are composed of cells with abundant

pale-staining lymphocytes, so-called monocytoid B-cells, and frequently demonstrate plasma cell differentiation [10-11]

Primary central nervous system lymphoma (PCNSL) is a rare central nervous system tumor, accounting for approximately 4% of all primary central nervous system tumors [13]

Hepatosplenic T cell lymphoma (HSTL) has been recognized as a distinctive clinico pathological entity among peripheral T cell lymphomas [14]

Primary cutaneous B-cell lymphomas (PCBCLs) are recognized as an independent category within non-Hodgkin lymphomas and are distinguished from T-cell lymphomas and secondary cutaneous B-cell lymphomas [15]

Mantle cell lymphoma (MCL) is a rare malignancy reported mainly through case reports [1,2]. It is a B-cell lymphoma that comprises 3-10 % of all non-Hodgkin's lymphomas [16]

Malignant Lymphomas (ML) comprising Hodgkin's Lymphoma (HL) and Non-Hodgkin's Lymphoma (NHL) are characterized by malignant transformation of lymphoid cells where a monoclonal expansion of the tumor cell emerges from a mutation in a lymphoid progenitor cell at the lymphoid differentiation pathway [17]

Adult T-cell leukemia/lymphoma (ATLL) is a highly aggressive leukemia/lymphoma that was first proposed as a new disease entity in 1977 [19-20]

Follicular lymphoma (FL) is the most common form of indolent B cell non-Hodgkin lymphoma (NHL) and accounts for approximately 20% of lymphomas in adults [21-22]

Primary pancreatic lymphoma (PPL) is a rare form of extranodal lymphoma originating in the pancreas, and constitutes less than 0.5% of all pancreatic malignancies [23]

Treatments

Treatment of these patients includes chemotherapy and bone marrow transplantation depending on the disease's sub-type and clinical stage [1]

Autologous progenitor cells transplantation (APCT) after a high dose conditioning chemotherapy is now an established treatment modality for many hematological malignancies such as lymphoma [2]

ATL patients are usually first treated with chemotherapy [8]

Hodgkin lymphoma belongs to the group of malignancies with a high curability rate, as the 5-year relative survival is close to 84% for all forms of Hodgkin lymphoma combined, as a result of treatment based on chemotherapy and radiotherapy [18].

Blind Bone Marrow Biopsy (BMB) of the iliac crest, either performed unilaterally or bilaterally, is the gold standard method for diagnosing bone marrow involvement in lymphomas and in other haematological entities, like multiple myeloma [24].

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