Survival pattern of Non-Hodgkin's Lymphoma patients in the last 34 years in Lebanon

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Background

Over the last three decades, Non-Hodgkin's Lymphoma (NHL) has witnessed a major evolution in its classification, staging and treatment approaches.

Following the introduction of immunohistochemistry which allowed better characterization of its subtypes, and the recent usage of PET –CT (Positron Emission Tomography- Computed Tomography) scan for more accurate staging, the recognition and the management of treatment-related toxicities led to an improvement in the treatment outcomes and a more adequate disease approach, especially with the usage of monoclonal antibodies targeting CD20.

All these factors influenced the Overall Survival (OS) of patients with NHL.

Objective

To compare the overall survival of Non-Hodgkin lymphoma patients in Lebanon over three different decades

Materials & Methods

We conducted a retrospective study, and reviewed the medical files of 639 patients diagnosed with NHL between January 1984 and December 2017. These patients were then followed during and after their treatments in two Lebanese Medical centers.

Patients were divided into 3 groups according to the change in the classification and the management of the NHL: Group A included all the patients diagnosed from January 1984 till December 1993, Group B featuring the patients diagnosed from January 1994 until December 2002 and Group C for the patients followed between January 2003 and December 2017. We studied the baseline characteristics and the survival pattern of each patient in each group.

Discussion

Mean OS at 10 years was 74.003 months, 86.911 months and 99.006 months respectively in the groups A, B and C, with a significant p value of 0.000. Our findings are concordant with the literature where the 5 years survival rate of NHL has increased from 30% to 68% and from 31% to 70% in men and women respectively between 1971 and 2011 (1).

This improvement can be attributed to major modifications related to pathological classification, staging techniques and treatment modalities.

In the past 50 years, the classification of NHL has been controversial with the introduction of the Rappaport Classification in 1966, Working Formulation in 1982 and REAL (Revised European-American Classification of Lymphoid Neoplasms) classification in 1994. The latter lacked prognostic characterization and detailed subtyping (2). It was replaced by the World Health Organization (WHO) classification in 1999, integrating a combination of morphologic, immunophenotypic, genetic, and clinical features, which led to more precise categorization of NHL patients (2).

PET scan headed to more accurate staging, and when performed after 2 cycles of chemotherapy it provided prognostic information and allowed tailoring of therapy (3).

The addition of new therapies, especially monoclonal antibodies targeting CD20 had drastically enhanced OS in lymphomas expressing CD20 (4). Moreover, in recent years, many new drugs improved the OS of Relapsed Refractory lymphomas (4).

Results

Patient Demographic and Tumor Characteristics

Mean age	53.09 years
Male/ female ratio	1.19%
B type lymphoma (DLBCL)	90.1% (54.2%)
Aggressive disease	65.2%
High grade tumors	78.9%
Stages:	
• I	• 14.4%
• II	• 29%
• III	• 24.3%
• IV	• 32.3%
Extra-nodal NHL	36.1%

HISTOLOGIC CLASSIFICATION IN THE 3 GROUPS

Overall Survival in the 3 groups

We had a Response Rate of 95.4% with 87% complete response and 27% death rate. The mean OS at 10 years was 90.718 months in all the population, and is divided as follow 74.003 months, 86.911 months and 99.006 months in the groups A, B and C respectively with a significant p value of 0.000.

References

1. Non-Hodgkin lymphoma survival statistics, Cancer Research UK
2. Another Lymphoma Classification, CE Update Hematology III
3. FDG PET and risk-adapted therapy in Hodgkin's and non-Hodgkin's lymphoma, NCBI
4. CHOP chemotherapy plus Rituximab compared with CHOP alone in elderly patients with Diffuse Large B Cell Lymphoma, NEJM