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Original Article

Descriptive epidemiology of Non-Hodgkin's lymphomas in Hatay

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Abstract. The incidence of Non-Hodgkin's Lymphomas (NHL) varies among different parts of the world. NHL are the 12th most common cancer in Europe and increasing dramatically during the last years. In this study, it was aimed to analyse the descriptive epidemiology of NHL in Hatay region with retrospective archieve datas.

One hundred and thirty-three NHL cases between 2005 and 2013 have been reviewed retrospectively in the Pathology Department of the Mustafa Kemal University. All of the cases were classified according to World Health Organization modified in 2008.

Eighty-two (61.7%) cases were male and 51 (38.3%) cases were female. Ninety-two of the cases (69.2%) were nodal lymphoma, and the remaining 41 (30.8%) were extranodal lymphoma. The most common extranodal involvement regions were tonsils and nasopharynx with frequencies of 21.9% (9) and 19.5% (8), respectively. The age distribution pattern revealed that NHL were mostly diagnosed in the ages of 41-65 years in nodal (41.3%) and extranodal sited NHL groups (53.6%). The most frequent NHL was diffuse large cell B cell lymphoma (50.4%) and chronic lymphocytic leukemia/small lymphocytic lymphoma (17.3%).

Our results were similar with the literature. Further epidemiologic studies with larger series defining the profile of NHL subtypes may be more worthy.

Key words: Non-Hodgkin's lymphoma, histologic subtype, extranodal involvement, descriptive epidemiology

1. Introduction

World Health Organization defined cancer as one of the leading causes of death around the world and determined 7.6 million deaths with this disease. Lymphomas comprise a respective place with Non Hodgkin's lymphomas (NHL) 6.7 and Hodgkin's lymphomas 2 per 100.000 cases and present with various clinical syndromes and morphology (1). Burkitt's lymphoma and lymphoblastic lymphoma are the most common subtypes in children, whereas small lymphocytic lymphomas and follicular lymphomas are more frequent in elderly patients (1,2). Small lymphocytic lymphomas and follicular lymphomas frequencies were found to be higher in West countries compared to East countries (3,4).

NHL are the 12th cancer in Europe and increased dramatically from 1970s with 66.360 new patients diagnosed also in United States (5,6). While NHL consititute 3-4% of all malignancies in Western countries, this rate is 8% in Turkey. WHO classification in 2008 is the current classification and corporates with morphology, immunophenotype, cytogenetic, clinical behavior, prognosis for each subtype of NHL. But there are new entities described and still unknown questions to be answered. In this point of view, epidemiologic studies defining the profile of NHL could be worthy. The aim of this study to update the frequencies of NHL in our center in Hatay, Turkey and determine the epidemiologic data of these cases.

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2. Materials and methods

This is a descriptive, epidemiologic archieve based study. We have analysed the datas of 133 consecutive cases of NHL retrospectively diagnosed between 2005 and 2013 in Mustafa Kemal University, Pathology Department. The diagnosis was established by histologic examination of surgical biopsy specimens of nodal or extranodal sites based on clinical information and cyto-morphological diagnostic criteria proposed by WHO 2008. The demographic data of patients including age, gender, sex, histopathologic subtype and localization of NHL have been recorded. The age range has been grouped as 40 and less, 40-65, 66 and over in nodal and extranodal lymphomas.

Statistical analysis

Statistical evaluations were performed using the "SPSS 13.0 for Windows" packet program. Both descriptive and analytic statistics were used. Chi-square test was chosen for comparisons between categorical variables. $p<0.05$ was considered statistically significant. Cumulative incidence (number of new cases /preliminary risk population) was calculated.

3. Results

A total of 133 cases of NHL were diagnosed over a nine year period (2005-2013) at our department. The frequency for each year is described in Table 1. Eighty two (61.7%) cases were male and 51 (38.3%) cases were female. Among 133 patients, 49 (36.8%) were at the age 66 years and over, 60 (48.1%) were between the ages of 41 and 65 years, and 24 (18%) were under the age of 40 years. The age ranges were similar in genders (p=0.051). Ninety two (69.2%) cases were nodal lymphoma, 41 (30.8%) were extranodal lymphoma. Sixty one (74.4%) of male cases were nodal NHL and 21 (25.6%) were extranodal. On the other hand, 60.8% (31) of the female cases were nodal and 39.2% (20) of them were extranodal NHL. The localizations of NHL were similar between genders (p=0.098). The age distribution revealed that 41.3% (38) of the nodal NHL and 53.6% (22) of the extranodal NHL cases were between the ages of 41 and 65 years. The most frequent histologic subtype was diffuse large B cell lymphoma (DLBCL) 67 (50.4%), followed by chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL) 23 (17.3%). Fourteen (10.5%) cases were miscellaneous (Table 2). The categorization of patients according to age range groups are demonstrated in Figure 1. The detailed localization of extranodal sited NHLs are listed in Table 3. The most common extranodal localization was tonsil in nine cases (21.9%), followed by nasopharynx in eight cases (19.5%). DLBCL were the prevalent diagnosis in all of the age ranks. Cumulative incidence of NHL in our series was 0.00033.

Table 1. Non-Hodgkin Lymphoma frequencies by year of diagnosis

Year of Diagnosis	Frequency n (%)
2005	1 (0.8%)
2006	7 (5.3%)
2007	4 (3.0%)
2008	14 (10.5%)
2009	15 (11.3%)
2010	18 (13.5%)
2011	27 (20.3%)
2012	27 (20.3%)
2013	20 (15.0%)
Total	133

Table 2. Non-Hodgkin Lymphoma's frequencies

Diagnosis	Frequency n(%)
Miscellaneous	14 (10.5%)
Diffuse large B cell lymphoma	67 (50.4%)
Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma	23 (17.3%)
Mantle cell lymphoma	3 (2.3%)
Acute lymphoblastic lymphoma	6 (4.5%)
Anaplastic large cell lymphoma	3 (2.3%)
Burkitt's lymphoma	1 (0.8%)
Follicular lymphoma	8 (6.0%)
Marginal zone lymphoma	8 (6.0%)
Total	133

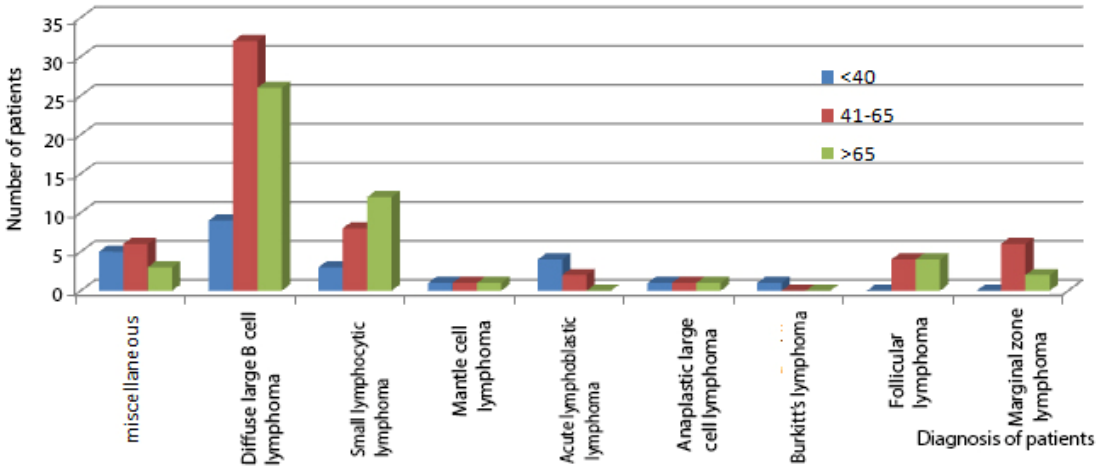

Fig. 1. Diagnosis by age ranges (<40, 41-65 and 65>).

Table 3. Extranodal Lymphoma's frequencies

Diagnosis	Frequency n (%)
Nasopharynx	8 (19.5%)
Spleen	2 (4.9%)
Stomach	6 (14.6%)
Liver	2 (4.9%)
Tonsil	9 (22.0%)
Bone	3 (7.3%)
Thyroid	1 (2.4%)
Lung	1 (2.4%)
Surrenal	1 (2.4%)
Colon	2 (4.9%)
Skin	2 (4.9%)
Brain	1 (2.4%)
Ileum	1 (2.4%)
Salivary gland	2 (4.9%)

4. Discussion

The incidence of NHL differs considerably around the world. There are various epidemiologic studies worldwide (7-9), but are few and almost absent in Hatay. Hatay has a population of different lifestyles, different traditional backgrounds and ethnic origins. Our effort is to update the profile of NHL in our region and focus our studies on the most prevalent subtypes to enable effective and qualified diagnostic and therapeutic approaches.

Lymphomas constitute 160 (0.66%) of all biopsies examined in our centre; composed of 133 (0.54%) NHL and 27 (0.12%) Hodgkin Lymphoma patients. The frequency rates are low when compared with relative frequency rates (8.0%) overall Turkey (10) but this difference might be related to the peripheric localization of our centre which results patients move to advanced hospitals in other cities.

NHL present with different clinical symptoms, history and histologic subtypes according to the geographic locations. While 85-95% of NHL is B cell type in Europe and North America, T-cell lymphomas are more frequent in Japan, Asia and Africa (3,11). DLBCL represents 30% of all lymphomas according to recent data and classification (12). In our series DLBCL were also the commonest (50.4%) subtype followed by CLL/SLL (17.3%) which are both B cell lymphomas. A study from southeast of Turkey conducted by Isıkdogan et al. (13) demonstrated DLBCL as 41% and CLL/SLL as 7.1% a lower incidence of patients when compared with our series.

Our data including nine years period demonstrated 133 new NHL cases that have been diagnosed among a population of 400.000 habitants. In a study conducted by Novelli et al. (5) they have determined 701 new cases in period of 8 years for a referral population of 500.000. When we compare the frequencies, our rates are lower which again prove us a part of lymphoma patients referring to neighboring cities.

There is a male predominance in the literature in NHL (14-17). We have also obtained slight male dominance in our series. Male to female ratio is 1.5. Similar to our study conducted by Omoti et al. (17) in Nigeria they found male:female ratio as 1.6.

The age of diagnosis was most frequent at the interval of 41-65 in both of the nodal and extranodal NHL in our series. Similarly, Omoti et al. (17) observed NHL in 46-59 years group and Yilmaz et al. (10) defined fourth decade the most frequent age range of NHL diagnosis. Differently,

Novelli et al. (5) described 60-80 years old group as the highest age range of diagnosis. Beside this when we viewed the histologic subtypes by age we recognized low grade NHL present in older patients and high grade in younger patients.

NHL are categorized as nodal and extranodal lymphoma according to their primary site of origin (18). There is a dramatic increase of NHL in the last two decades especially in extranodal lymphomas in developing countries like us (19). Extranodal origin presents with 24-48% rates in different series (20). We found 41 (30.8%) extranodal lymphomas parallel with the literature.

Extranodal lymphomas can be determined in almost all organs, but head and neck, skin, stomach, brain, small intestine are the most common locations (21,22). We determined 9 (6.8%) tonsil and 8 (6.0%) nasopharynx NHL in our study declaring the head and neck localizations' predominance. There has been also spleen, stomach, liver, skin, ileum, bone, thyroid, lung, surrenal, colon, brain and salivary gland localizations. Although our number of NHL series was not rich in number it has been interesting to determine these diverse localizations of extranodal lymphomas which points us the heterogenic genetic prophile of our region.

In conclusion; this is the first report of a series of a malignant lymphomas from Hatay for nine years period. When we examine the characteristics of our series we determine that our findings have some differences from those from rest of Turkey and the world. We hope and believe that by advancing technical and clinical conditions, follow-up of our hemato-oncologic patients would rise rapidly in our centre which could improve our scientific development.

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