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Non-Hodgkin's malignant lymphoma: Descriptive Epidemiology and risk factors.

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Retrospective study was done on some cases having Malin Lymphoma Non-Hodgkin's gastric recorded in Hepato-Gastroenterology department of University Hospital in Rabat during the period 2000 to 2010. The aim of this work is to describe the sociodemographic, epidemiological and risk factors. During the study period we registered 70 cases of Hodgkin's Lymphoma Non Malin, an average of 4 ± 0.59 cases / year. The male sex is the most represented with a frequency of 56% ($\chi^2 = 0.91$, $p > 0.05$). The average age of hospitalized patients with Non-Hodgkin's malignant lymphoma is 54 ± 2.4 years, with a minimum age of 19 years and a maximum age of 85 years. The anatomical pathology results showed that the Non-Hodgkhnian Malignant Lymphomas of MALT type of high grade with large B cells are the most marked with a proportion of 85% and 53% of cases presented antral localization according to the topography of the tumor. Non-Hodgkin's Malignant Lymphomas are a real health problem, or early diagnosis and a support are more desirable.

Keywords: Non-Hodgkin's malignant lymphoma- Epidemiology - Risk Factors

INTRODUCTION

Worldwide, cancer is one of the leading causes of morbidity and mortality World Cancer Report 2014, IARC. In 2012, there were 8.2 million deaths related to the disease of which 3.5 million are women; 14 million new cases including 6.6 million women and 32.4 million cases prevail over 5 years including 17.1 million women World Cancer Report 2014, IARC. More than half of all cancers (56.8%) and cancer deaths (64.9%) in 2012 were in the least developed regions of the world World Cancer Report 2014, IARC.

In Morocco, cancers are a real public health problem. It is the second leading cause of death (13.6%) after diseases of the circulatory system (20.4%) Ministère de la Santé, Maroc. Santé en chiffres 2014. A standardized age-specific mortality rate is estimated at 78.4 per 100 000 according to Globocan 2012 Registre des cancers

de la région du Grand Casablanca, Année 2005, 2006 et 2007 ; Edition 2012, which is different from the rate reported by the Casa blanca cancer registry between 2008 and 2012, whose Mortality related to different types of cancer is estimated at 40 per 100 000 (Jemal et al., 2011)

In this work we will study gastric lymphomas from lymphoid tissue associated with the digestive tract. They are also called MALT (Mucosa Associated Lymphoid Tissue) which originate from B or T lymphocytes. B lymphomas predominate markedly (90%) and T lymphomas (10%) are rarer but no less interesting physiopathological Ruskoné-Fourmest et al., 2002

The aim of this work is to describe the sociodemographic characteristics, epidemiological and risk factors of patients who have been hospitalized in the Service of Hepato-Gastroenterology at the University Hospital of

Rabat in Morocco.

MATERIALS AND METHODS

This is a retrospective epidemiological study during the period 2000 and 2010, based on the records of patients in which their biopsies made during the examination of their stomachs by fibroscopy in the department were consulted of Hepato-Gastroenterology at the University Hospital Center in Rabat, Morocco.

The statistical analysis of the data was carried out using the SPSS software and the statistical methodology was based on two axes:

Descriptive statistic: release of the frequencies and the characteristics of each parameter studied (average, minimum, maximum ...). Results are expressed as gross values for categorical variables (sex, year, age group, evolution) and averages \pm error for quantitative variables (age, duration of survival...).

Analytical statistics: based on association tests such as the χ^2 test which measures the difference between the frequencies observed and the theoretical frequencies. On the other hand, the calculation of the Odds Ratio (OR) for each age class in order to detect the degree of association between the membership of a certain age group and the evolution of the patient towards death. If the value 1 is included in the confidence interval (CI) of the OR, it is deduced that there is no association between these two parameters. On the other hand, if the value 1 is excluded from the OR, it is concluded that there is an association between membership of a given age group and evolution towards death.

RESULTS

Sociodemographic data:

The temporal distribution of lymphomas recorded, during the 11 years of study, in the hepatogastroenterology departments of IbnSina Hospital, Rabat Department of Medicine B is illustrated in Figure (1). A total of 70 cases were collected, an average of 4 ± 0.59 cases / year. The results of this evolution show that the years 2001; 2004 and 2010 are the highest with 19, 16 and 10 hospitalized cases respectively, unlike other years where the number of registered cases is much lower.

Figure 2 shows the distribution of patients by origin. According to its results, the Rabat-Sale-Kenitra region registered the highest number of cases, with a number of 43%, followed by the Oriental and Rif region with a number of 13% and

then the region of Tangier-Tetouan with a number of 12%.

The average age of hospitalized patients with Non-Hodgkin's Malignant Lymphoma is 54 ± 2.4 years, with a minimum age of 19 years and a maximum age of 85 years.

For all cases of this type of cancer, the age group [40-50] years is the most affected, 27% for females and 5% for males followed by age [70-80] years with 24% for males and 20% for females and then for [50-60] years, with 21% of males and 17% of females (Figure 3).

On the other hand, the distribution of Non-Hodgkin's Malignant Lymphoma according to sex shows that out of 70 Non-Hodgkin's Malignant Lymphoma patients, 39 patients are male, which represents 56% and 44% ($n = 31$) are, therefore, female ($\chi^2 = 0.91$, $p > 0.05$) (Table 1).

The average age for males is 50 ± 3.3 years, with a minimum age of 19 years and a maximum age of 84 years. Similarly, the average age for females is 58.8 ± 2.8 years, with extremes ranging from 24 to 85 years (Figure 3).

In addition, the calculation of the sex ratio for deceased patients (Male / Female) is 1.2, with non-significant deference ($\chi^2 = 0.15$, $p > 0.05$) (Table 1).

Anatomical pathology findings :

All patients underwent perendoscopic biopsies in 70 cases. Histological confirmation of Non-Hodgkins Malignant Lymphomas was obtained in all cases.

Depending on the degree of malignancy of the Non-Hodgkins Malignant Lymphomas, the most common type in these patients is low-grade large B-cell (85%), followed by low-grade small-B-cell Non-Hodgkins Malignant Lymphomas in 13% of cases.

Stage classification is important for prognosis and treatment of lymphoma and Ann Arbor's classification is used. The different stages reported in our sample are shown in Table (2) below.

The topography of the tumor was specified in all patients. According to the results of Table 2, the antral localization is the most frequently observed with a frequency of 53%, followed by the pangastric localization in 24% of the cases then the fundic localization in 16% of the cases.

On the other hand, the study of Odds Ratio of death for each age class compared to the others showed that there is an association between the evolution towards death and the age classes of [70-80] years. (1 is not included in the CI). Odds

Ratio and their signification are shown in Table 4.

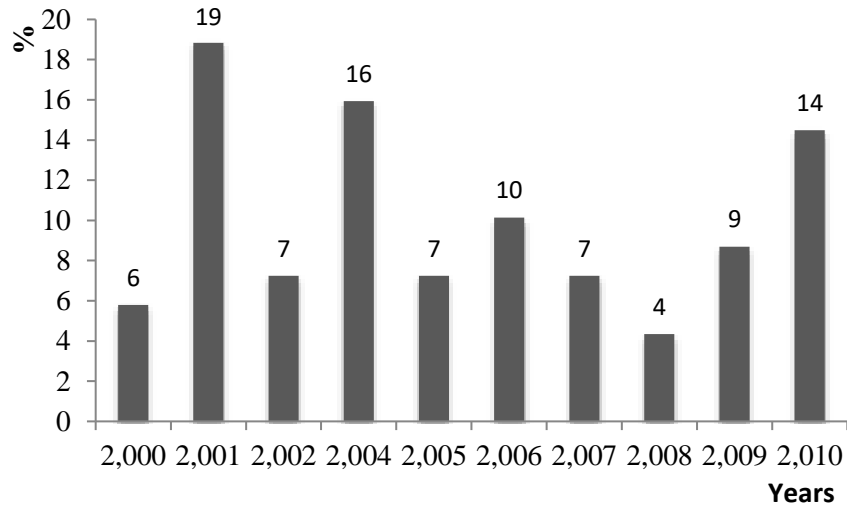


Figure 1:Yearly distribution the number of cases.

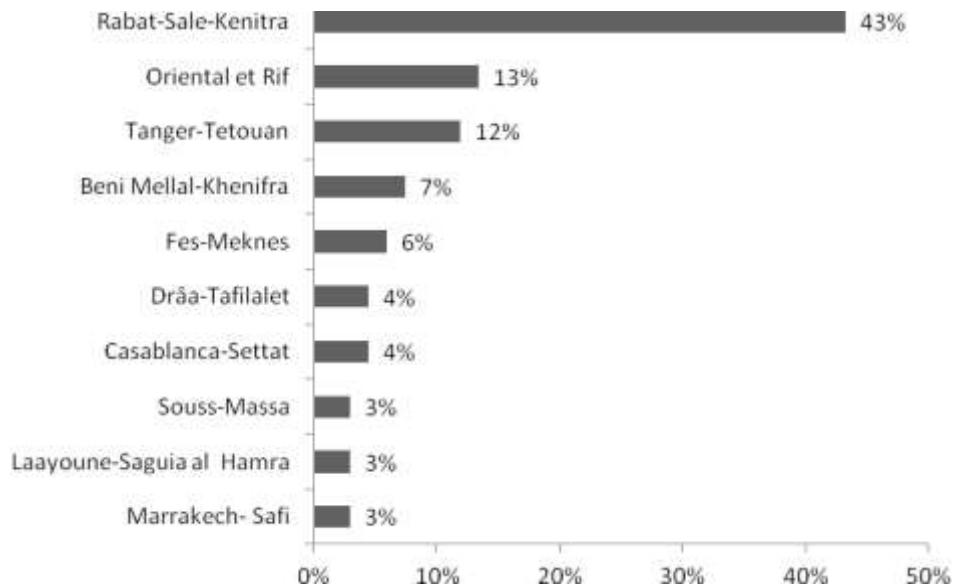


Figure 2:Distribution of patients by origin

Table 1: Frequency differences between men and women

	Total	Male	Female	Ratio (M/F)	Khi2 (1ddl)	p
Number of cases	70	39	31	1.2	0.91	> 0.05
Number of deaths	26	14	12	1.2	0.15	> 0.05

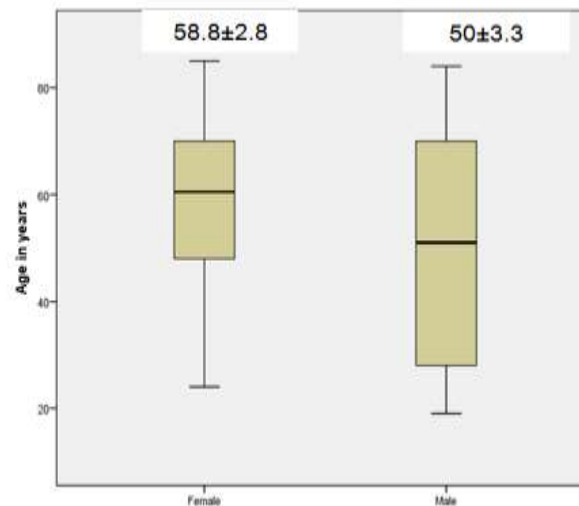
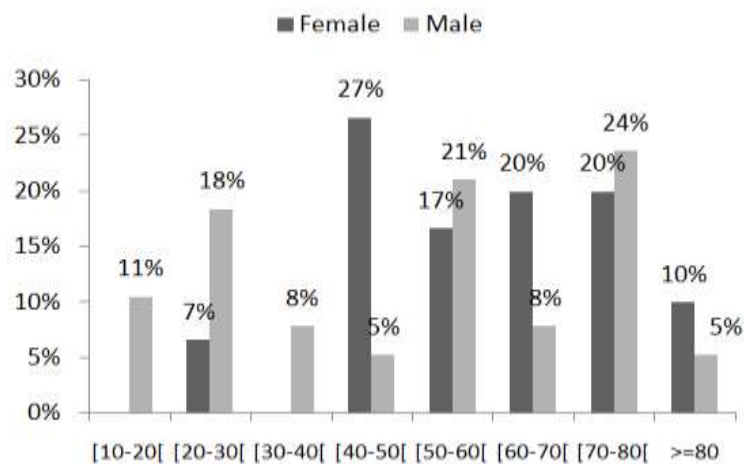


Figure 3: Distribution of percentages of Non-Hodgkin's Malignant Lymphoma found according to the age groups.

Table2: Representation of anatomopathological parameters.

Variables	Female	Male	Total (%)
Histological features of the tumor			
Non-Hodgkin's malignant MALT lymphoma of low grade large B cells	7	2	13
Non-Hodgkhnian Malignant Lymphomas of MALT type of high grade with large B cells	24	35	85
Non-Hodgkhnian Malignant Lymphomas of low-grade MALT has large B cell	-	2	2
Total	31	39	100
Stade			
stade Ie	20	22	60
stade II 1E	3	2	7
stade II 2E	5	10	22
stade IV	3	5	11
Total	31	39	100
Topography			
Antral	16	21	53
Cardial	2	3	7
Fundus	5	6	16
Pangastrique	8	9	24
Total	31	39	100

Table 3: Death Odds Ratio per age group and their significations.

Age class (years)	n	OR	Confidence interval (CI _{95%})	
			Inferior	Superior
[10-20[-	-		
[20-30[-	-		
[30-40[	1	0.85	0.07	9.88
[40-50[	2	0.38	0.07	1.95
[50-60[	4	0.72	0.2	2.63
[60-70[	3	0.84	0.19	3.7
[70-80[	12	12.31	3	50.49
≥80	3	2.8	0.43	18.04

DISCUSSION:

Non-Hodgkin's malignant lymphoma of the stomach is an important problem in the oncological pathology of the digestive tract (Malik et al., 1976 and Onuigbo, 1975). They retain their formidable gravity despite the progress made therapeutically. This severity is even more alarming in Africa, where hospital consultations are late and the therapeutic arsenal is still modest (Bagnan et al., 1994). In Morocco, a total of 1901 cases were identified during the period 1985 and 2002 according to the National Institute of Oncology of Rabat (Torre et al., 2015).

Our study has collected 70 cases of Non-Hodgkin's Malignant Lymphoma during the period 2000 and 2010, which represents 23% of all stomach cancers. In other publications, they are around 6% (Kadende-Kaiser, 2004) and 36% (Ruskoné-Fourmest et al., 2002). Thus, results are very diverse from one study to another; this difference could be explained by the number of

cases and collaged different types of gastric cancer diagnosed.

The region of Rabat-Salé-Kenitra occupies the first place with a frequency of 43%, this could explain by the proximity of the University Hospital of Rabat. Nevertheless, the Oriental Rif region is the second most affected position in Hodgkin's Malignant Lymphoma, this could be due to exposure to poor living and habitat conditions, food preservation and hygiene (Ammor et al., 2005). Similarly, the effects of chemical weapons used by Spain in this region.

As for the sex ratio (M / F), it is 1.2 ($\chi^2 = 0.91$, $P > 0.05$), with a slight predominance of the male sex. In other studies, the sex ratio (M / F) is 1.5 and 2.5 respectively (Roder 2002). This can be explained by dietary factors, genetic and *Helicobacter pylori* infection.

The average age of hospitalized patients is 54 ± 2.4 years. In fact, 62% of Lymphomatous patients are between 50 and 85 years old. This is

very similar to the results found by Salamatou (2013) on an epidemiological study conducted in Niger.

In our study, the histological results of the degree of malignancy of the Non-Hodgkin's Malignant Lymphomas show that high-grade, large-cell B (85%) Non-Hodgkin's Malignant Lymphomas are the most dominant in our study, consistent with a study conducted in the United States (Burke, 2011) This could be explained by the presence of patients at very advanced stage and the transformation of small B cells into large cells.

According to the Ann Arbor classification and thanks to the radiological, CT and endoscopic extension assessments carried out, 70 patients were staged, of which 42 were stage Ie (60%) and 15 stage I2e (21%) patients. . This differs from what is reported in the literature where the I2e stage is predominant with a frequency of 63.6%, followed by stage I1e (27.2%) (Ouhdouch ,2009)This is probably due to early consultation in favor of a digestive symptomatology which suddenly directs us towards the presence of a lymphosarcoma.

Regarding the location of gastric lymphoma tumors, it is found that the latter is predominantly antro-pyloric with a proportion of 53%. This is consistent with the results of other authors, where this location accounts for 49% of cases (Mellouki,2014)

Similarly, our results reveal that death was significantly related to advanced age ($p < 0.001$), which is similar to that of Boukhrissa in 2013.

CONCLUSION

The frequency of Non-Hodgkins Malignant Lymphomas is more common in adults and requires a good evaluation of risk factors. In addition to several studies have confirmed that men are most affected by this disease which will require more extensive research to find the causes.

CONFLICT OF INTEREST

The authors declared that present study was performed in absence of any conflict of interest.

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AUTHOR CONTRIBUTIONS

BA collected the data, realized the descriptive and analytical study and drafted it. QA reviewed the manuscript. All authors have read and approved the final version.

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