

## Papers

# Head and Neck Non-Hodgkin's Lymphomas

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74 patients with non-Hodgkin's lymphoma (NHL) in the head and neck were studied and 21 out of 74 (28.4%) had a primary extranodal location. The most commonly affected lymph nodes were the lateral cervical (48%); the extranodal NHL occurred most frequently in Waldeyer's ring (19%) and orbit (5.4%). Overall 10-year survival was 55.2% with a median survival of 42 months, and survival was higher in extranodal (67.3%) than in nodal locations (51.9%). No statistically significant difference between the survival of high-grade and low-grade tumours was observed. There was, on the contrary, a correlation between stage of the disease and survival of the patients. Most cases were B-cell lymphomas (91.8%). Nodal NHL presented at diagnosis in an advanced stage in a higher percentage (71.2%) than extranodal (48%). High-grade tumours seemed to affect mainly young people.

**Key words:** malignant lymphoma, non-Hodgkin's lymphoma

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### INTRODUCTION

A LYMPHOMA MAY BE defined as a proliferation of cells of the lymphoreticular system. These diseases are classified as either Hodgkin's disease (HD) or non-Hodgkin's lymphomas (NHL). Involvement of the head and neck region by HD is primarily nodal, while NHL frequently involves extranodal sites [1]; oral manifestations are seen in 3–5% of cases of NHL [2, 3], of these 15–45% have occurred in the maxilla and mandible [4, 5]. The malignant lymphomas are the seventh most common cause of death from cancer in the U.S.A.; the NHL are about three times more common than HD and the incidence of NHL is about the same as that of oral carcinoma [6].

### PATIENTS AND METHODS

All cases with a diagnosis of malignant lymphoma were selected from the files of the Haematology and Pathology Departments, and from the Dental School of the University of Chieti, Italy. Between January 1973 and January 1994, 795 patients were observed and treated, 263 (33%) with Hodgkin's disease (HD) and 532 (67%) with non-Hodgkin's lymphomas (NHL). In 74 of the 532 patients with NHL (14%) the site of presentation was in the head and neck. 21 out of 74 patients (28.4%) had a primary extranodal location.

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The following study focuses on these head and neck cases. Lymphomas were classified according to the Kiel classification. Staging has been carried out according to the Ann-Arbor classification. The patient study included physical examination, tomograms of the chest, lymphangiography, bilateral posterior iliac crest bone marrow biopsy, echography and laparoscopy of liver and spleen, hepatic and splenic biopsies, computed tomography and nuclear magnetic resonance. Staging laparotomy was not performed. In our study, the patient was classified as having a head and neck location when the initial presentation was mainly due to involvement at this site and/or the largest tumour was located in this region. No patient was found to be HIV +.

### RESULTS

Age, sex and site of presentation are shown in Table 1. Staging is shown in Table 2.

#### Survival

The overall 10-year survival was 55.2% while the median survival was 42 months. The 10-year survival in the nodal lymphomas was 51.9% (mean survival 35 months), while in the extranodal lymphomas the survival was 67.3% (mean survival 64 months). The 10-year survival of males and females was, respectively, 67.6% and 44.5%.

The 10-year survival of the low-grade and high-grade patients was, respectively, 58.7% and 55.0%. The correlation between the 10-year survival and the staging of the patients has shown that for stage I the survival was 100%, for stage II 92.4%, for stage III 55.8% and for stage IV 49%.

Table 1

<b>Age range (Mean)</b>			
Total	3-82	(58.2)	
Nodal	11-81	(67.5)	
Extranodal	3-82	(60.8)	
<b>Sex</b>			
Male	39		M/F Ratio 1.11:1
Female	35		
<b>Site of presentation</b>			
Lateral cervical	48%		
Orbit	5.4%		
Brain	2.6%		
Hypopharynx	1.3%		
Waldeyer's ring	19%		
Parotid	5.3%		
Rhinopharynx	2.6%		
Uvula	1.3%		

Table 2. Staging of all the head and neck NHL

	Cases* (n=74)	%	Nodal	Extranodal
Stage I	13	18	5 (9.6%)	8 (38%)
Stage II	13	18	10 (19.2%)	3 (14%)
Stage III	25	34	19 (36.5%)	6 (29%)
Stage IV	22	30	18 (34.7%)	4 (19%)

\*1 patient was not staged.

## DISCUSSION

More than half of our patients (64%) were in stages III and IV. Fukuda *et al.* [7], Shima *et al.* [8] and Economopoulos *et al.* [9] found, on the contrary, in a review of primary extranodal NHL of the head and neck that more than half of the patients were in the early stages at presentation.

Economopoulos *et al.* [9] found, on the other hand, that the majority of primary extranodal NHL lymphomas of the head and neck had tumours which belonged to the aggressive histological varieties. Most of our cases were B-cell lymphomas (91.8%) and the minority had T-cell lymphomas. Survival analysis of the present study has shown that the overall 10-year survival was 55.2%, while the survival according to sex was, respectively, 67.6% for males (63.8% nodal and 73.2% extranodal) and 44.5% for females (nodal 39.8% and extranodal 50.2%) and so in our study it appears that sex can be an important prognostic factor. Shima *et al.* [8] in contrast found that males had a significantly lower 5-year survival than females. Probably the most important prognostic factor was the stage of the disease, in accordance with the findings of Shima *et al.* [8] and Economopoulos *et al.* [9]; in fact, in our study, patients in stages I, II, III and IV had 10-year survivals of, respectively, 100%, 92.4%, 55.2% and 44.6%, while the histological grade did not affect the prognosis, and in fact the 5-year survival of low-grade and high-grade NHL was, respectively, 58.7% and 55%.

Shima *et al.* [8] presented different results and in their series

the 5-year survival of patients with low-grade, intermediate-grade and high-grade histological types was 91%, 54%, and 14%, respectively. Neilly *et al.* [10] found also that patients with high-grade disease had a poorer survival and Burton *et al.* [11] found a median survival in high-grade and low-grade NHL of 2.4 and 7.2 years, respectively. In our cases there was no correlation between histological grade and stage of the disease: in a high percentage of cases, patients in advanced stages (III or IV) were affected by low-grade malignancies, while, on the other hand, high-grade NHL were diagnosed in the early stages. Fukuda *et al.* [7], however, in a review of 20 cases of lymphomas of the oral cavity found that stage IV patients had high-grade tumours. Nodal NHL presented at diagnosis an advanced stage (III-IV) in a higher percentage (71.2%) than extranodal tumours (48%).

High-grade NHL affect mainly young people, while low-grade malignancies are more frequent in advanced age.

High-grade NHL are more frequent in extranodal locations (57%), but the overall 10-year survival is higher in extranodal NHL (67.3%) than in nodal NHL (51.9%) with a mean survival of 64 months as compared with 35 months. In contrast, Ribeiro *et al.* [12] found that extranodal involvement had an adverse influence on treatment outcome in children with NHL of the head and neck region, and Benasso *et al.* [13] found that survival was better in those patients with only nodal involvement.

1. Haidar Z. A review of non-Hodgkin lymphoma of the oral cavity 1950-1980. *J Oral Med* 1986, 41, 197-200.
2. Soderholm AL, Lindquist C, Hiekinheim K, Forssell K, Happonen RP. Non-Hodgkin's lymphomas presenting through oral symptoms. *Int J Oral Maxillofac Surg* 1990, 19, 131-134.
3. Takahashi H, Tezuka F, Fujita S, Okabe H. Primary extranodal non-Hodgkin's malignant lymphoma of the oral region: analysis of 11 autopsy cases. *J Oral Pathol* 1987, 16, 241-250.
4. Dexter Barber H, Stewart JCB, Baxter WD. Non-Hodgkin's lymphoma involving the inferior alveolar canal and mental foramen: report of a case. *J Oral Maxillofac Surg* 1992, 50, 1334-1336.
5. Slootweg PJ, Wittkamp ARM, Kluin PM, Wilde PCM de, Unnik JAM van. Extranodal non-Hodgkin's lymphoma of the oral tissues. An analysis of 20 cases. *J Maxillofac Surg* 1985, 13, 85-92.
6. Wilson TG, Wright JM. Non-Hodgkin's lymphoma of the gingiva: review of the literature. Report of a case. *J Periodontol* 1986, 57, 155-158.
7. Fukuda Y, Ishida T, Fujimoto M, Ueda T, Aozasa K. Malignant lymphoma of the oral cavity: clinicopathologic analysis of 20 cases. *J Oral Pathol* 1987, 16, 8-12.
8. Shima N, Kobashi Y, Tsutsui K, *et al.* Extranodal non-Hodgkin's lymphoma of the head and neck. A clinicopathologic study in the Kyoto-Nara area in Japan. *Cancer* 1990, 66, 1190-1197.
9. Economopoulos T, Asprou N, Stathakis N, *et al.* Primary extranodal non-Hodgkin's lymphoma of the head and neck. *Oncology* 1992, 9, 484-488.
10. Neilly IJ, Dawson AA, Russell D, Laing MR. Non-Hodgkin's lymphoma of the head and neck: experience in the Grampian area. *J Laryngol Otol* 1990, 104, 972-975.
11. Burton GV, Atwater S, Borowitz MJ, Huang AT. Extranodal head and neck lymphoma. Prognosis and patterns of recurrence. *Arch Otolaryngol Head Neck Surg* 1990, 116, 69-73.
12. Ribeiro RC, Fairclough DL, Sandlund JT, Crist WM, Berard CW, Pui CH. Extranodal primary tumor site indicates poor prognosis in childhood head and neck non-Hodgkin's lymphoma. *Leukemia* 1991, 5, 615-620.
13. Benasso M, Blengio F, Merlano M, *et al.* Lymphoma of the Waldeyer's ring: experience at the National Institute for Cancer Research of Genoa. *Acta Otorhinolaryngol Ital* 1990, 10, 439-446.