

trials have been reported after 1994. When we compared the periods 1987–1991 and 1992–1996, we have observed an increase in the number of reports (19 vs 45), a trend for more aggressive treatments (50% vs 85%), an increase in the number of chemotherapy regimens studied (16 vs 32), and an 1 increase in the number of patients enrolled in clinical trials (872 vs 4462), but the median number of patients per treatment arm has remained small (31 vs 39). The median age of patients (74 yrs) and other clinical characteristics have not changed. Prognostic factors, according to the IPI have been reported completely in only 25% of the reports, and only 5% give details of concomitant diseases. Response rate was reported in 92%, but survival in 40%. Dose-intensity or delivery of cycles are shown only in 30%. Toxicities have been reported insufficiently, especially cardiac toxicity (20%) and mucositis (25%). Ten studies have evaluated the prophylactic use of cytokines, but none of them was randomized.

Conclusions: Most reports concerning NHL in the elderly are non-randomized phase II studies that use very diverse chemotherapy regimens and evaluate a small number of cases. Most investigations show response rates, but only a few show overall survival. There is a very low incidence of complete reporting of prognostic factors, response rate, or treatment toxicity. There is a marked need to perform controlled randomized trials in elderly patients with NHL that evaluate an adequate number of patients, in order to determine 1) treatment selection by prognostic factors, 2) the optimal treatment regimen(s), and 3) the need for the use of cytokines.

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POSTER

Epidemiology of non-Hodgkin's lymphoma in Occidental Canary Islands

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Purpose: The present study review the patients's characteristics with Non-Hodgkin's Lymphoma (NHL) in an specific geographic area, Occidental Canary Islands (Spain), along 15 years.

Methods: From 1980 to 1994 we reviewed the cases of NHL collected from the two reference hospitals of this area, formed by four islands.

Results: We analyzed 525 patients. Mean age was 59 years (range 15 to 88). 283 males (54%) and 242 females (46%). Stage I 110 p (21%), stage II 88 (17%), stage III 88 (17%) and stage IV 218 (42%). Histology according to Working Formulation (WF) was: low grade 154 p (29%), grade intermediate 200 (38%), high grade 120 (23%), and 56 (11%) could not be classified. Average annual incidence per 100.000 in sequential time periods by age and gender was:

		All	15–34	35–54	55–74	<74
1981–84	All	5.5	1.2	4.5	15.4	12.3
	Male	6.8	1.7	4.7	21.4	15.8
	Female	4.3	0.6	4.3	10.4	10.6
1985–89	All	7.3	1.1	4.8	23.5	19.4
	Male	8.4	1.0	5.5	26.9	34.8
	Female	6.3	1.2	4.1	19.4	9.7
1990–94	All	8.0	1.6	6.1	20.2	24.4
	Male	8.0	1.4	6.3	22.2	28.3
	Female	8.0	1.8	5.9	18.4	21.9

17 years overall survival was 30%, median 5 years. Median survival by low grade, grade intermediate and high grade was 8, 5 and 1.5 years. 14 years overall survival was 34%, 30% and 20% respectively.

Conclusion: The NHL incidence in this geographic area is increasing. The frequency is higher in male older than 54 years.

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POSTER

Results of radiation therapy and combined radio-chemotherapy in the treatment of the CB-CC non-Hodgkin's lymphoma

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Purpose: To evaluate the results of treatment of centrocytic-centroblastic Non-Hodgkin's lymphomas with special respect to recurrent disease and site of recurrence.

Methods: From 1978 to 1993 83 patients were treated with radiotherapy. 37 patients with localized disease were only irradiated, 46 patients with progressive disease underwent combined radio-chemotherapy. Standard dose applied was 26 Gy. In 27 cases an involved-field technique, in 56 cases an extended-field technique was used.

Results: After treatment 53 of 83 patients were in complete remission. 44 patients (53%) developed recurrent or progressive disease seven to 95 months after radiotherapy. 16 recurrences (36%) occurred within the primary target volume, 28 (64%) outside. The rate of recurrence was lower and the latency to recurrence prolonged after extended-field irradiation and chemotherapy. The overall five-year-survival rate was 66%, the tumor-free survival rate however only 25%.

Conclusions: The five-year-survival rate is increased after combined radio-chemotherapy and extended-field-irradiation. Extended-field-techniques are lowering the rate of local recurrences. According to the literature the dose has to be elevated to 36 Gy in order to achieve further improvements.

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POSTER

Splenectomy in patients with non-Hodgkin's lymphoma

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Purpose: To evaluate the role of splenectomy in patients with non-Hodgkin's lymphoma (NHL) for diagnostic or therapeutic reasons.

Methods: Among 403 patients with NHL diagnosed and treated in our Unit during the last 17 years, splenectomy was performed in 24 (6%) patients. Group A: In 16 cases splenectomy was performed for diagnostic reasons. Group B: 3 patients were splenectomized for autoimmune hemolytic anemia (AIHA). Group C: 5 patients were splenectomized because of hypersplenism. There were 12 men and 12 women with a median age of 54 years (26 to 76 years). 17 patients were in advanced stages (III–IV). Histologically 14 patients had intermediate or high grade, while 10 had low grade NHL.

Results: In all patients of group A spleen was infiltrated by NHL, with a median weight of 1500 g, (range 700–2200 g). Liver and abdominal lymph nodes were infiltrated in 8/14 (57%) and 12/16 (70%) patients respectively. All patients of group B were classified in stage IV. In two of them the spleen was massively enlarged and infiltrated by NHL. In all patients of this group AIHA resolved after splenectomy. Hypersplenism was resolved in 4 patients after splenectomy, while the fifth patient died postoperatively. Surgical complications were observed in 5 (20%) patients, while 7 serious infections occurred in 6 patients, and one was lethal.

Conclusions: 1) Splenectomy is useful for diagnosis in some patients with NHL and splenomegaly. 2) In patients with NHL and AIHA unresponsive to other manipulations, splenectomy is very effective. 3) Splenectomy should be considered in all patients with NHL associated with hypersplenism. 4) Infections are common in splenectomized patients, and should be treated promptly and vigorously.

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POSTER

Primary extranodal non Hodgkin's lymphoma of the head and neck (HN-NHL)

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Purpose: HN-NHL accounts 10–20% of all cases of NHL. Despite their frequency natural history and biological behaviour of these lymphomas is poorly understood. In this study we analysed our cases of HN-NHL diagnosed and treated in our Units during the last 17 years.

Methods-Results: Clinical and histological data from 114 patients with HN-NHL, were reviewed. There were 63 males and 51 females with a median age 56 years. The distribution among different anatomical sites was: tonsils 55 cases (48.2%), pharynx 18 (15.8%), mandible and gums 8 (7%), hard palate 7 (6.1%), nasal cavity 6 (5.3%), parotis 6 (5.3%), thyroid 5 (4.4%), larynx 2 (1.8%), miscellaneous 7 (6%). The patients were treated with radiotherapy alone (15 cases), combined chemotherapy (51) and combined modality (45). The disease was mainly localised (Stage I: 50.8%, Stage II: 34.4%). According to the WF histological classification 73 cases (64.1%) were intermediate, 28 (24.5%) high and 13 (11.4%) low grade. Complete remission was achieved in 97 (87.4%) patients. Patients were separated in two groups: Tonsillar NHL (55 cases) and NHL of all other sites of the HN (non-Tonsillar NHL, 59 cases). The patients with Tonsillar NHL did not differ significantly from the non-Tonsillar NHL in respect of the sex, age, stage, histological subtypes and treatment response. However the two groups differed in 3 respects: disease free period (DFP), overall

survival and patterns of relapse. The DFP was 65 months for the Tonsillar and 92 for the non-Tonsillar group. The median survival was 86 months for the first, while it has not reached yet in the second group. The most common site of relapse was GI tract in the Tonsillar group (7 out of 21 cases) and CNS in the non-Tonsillar NHL (4 out of 14 cases).

Conclusion: The most common site of HN-NHL is tonsil. The vast majority of HN-NHL are presented in early stages and belong to aggressive histology. Tonsillar NHL have rather different clinical behaviour and should be considered as distinctive and separate entity.

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POSTER

Primary gastrointestinal lymphoma: Long-term follow-up of 75 patients treated in 2 German centers

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The gastrointestinal tract is the most common site of extranodal lymphomas. We present long-term follow-up data of 75 patients with primary gastrointestinal Non-Hodgkin's lymphoma (GI-NHL) treated in two German centers. The median age was 63 years, range 28–85. 60% of patients had high-grade NHL. The median tumor diameter was 9 cm. Major treatment options were limited surgery and/or radiotherapy in localized low-grade GI-NHL with or without chemotherapy. The mainstay of the treatment was chemotherapy in all stages of high-grade GI-NHL. 10-year overall survival rate was 57%. Patients with gastric lymphoma had a better prognosis (10-year survival rate 73%) than patients with lymphoma of other sites of the gastrointestinal tract (10-year survival rate 44%). Bleeding or perforation rarely occurred during chemotherapy without lethal consequences. Patients with high-grade as well as low-grade gastric lymphoma had an excellent prognosis if they achieved a complete remission at any time of their treatment (10-year overall survival rate >90%). Patients who could not achieve a complete remission had a much worse prognosis (4-year overall survival rate 14%) irrespective of the malignancy grade of their lymphoma. These results suggest that GI-NHL have a different clinical course than their nodal counterparts and the achievement of a complete remission should be a therapeutic goal even in low-grade GI-NHL.

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POSTER

Secondary tumors in longsurvival patients with Hodgkin (HDK) disease

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Purpose: We report our experience of secondary tumors in the series of patients seen in our hospital between January 1967 and December 1995.

Methods: We review the medical records of 486 patients with HDK followed in our hospital and the type of secondary tumor, period of presentation and mortality of the group were analyzed.

Results: Forty six second tumors were found. Leukemia and myelodysplastic

Tumor type	N° (%)	<5 years	5–10 years	>10 years	Mortality
Leukemia/MDS	12 (26)	4/4	6/6	2/2	12/12
Lymphoma	7 (15)	1/3	2/2	1/2	4/7
Lung ca	7 (15)	0/1	3/3	1/3	4/7
Breast ca	7 (15)	–	1/1	2/6	3/3
Sarcoma	6 (14)	2/2	2/3	0/1	4/6
Others	7 (15)	1/2	1/3	1/2	3/7
Total	46 (100)	8/12 (35%)	16/18 (36%)	7/18 (38%)	31/46 (67%)

syndrome (MDS) were the most commonly observed (33%) during the period of 10 years following diagnosis; after the 10th year, leukemia and MDS represented only 12% of the total at that period and breast and lung carcinoma reached the 56%.

Conclusion: Prolonged follow-up of HDK patients shows a steady rate of secondary tumors. Breast and lung Ca. screening must be recommended in this group of patients

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POSTER

Serum L-Selectin and P-Selectin levels in lymphomas

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Purpose: Adhesion of lymphocytes to endothelium is essential in lymphocyte trafficking. Lymphoma cells represent immortalized counterparts of normal lymphocytes. Altered expression patterns of adhesion molecules appear to be involved in the spread of lymphoid malignancies. In this study, serum levels of soluble L-Selectin and P-Selectin were determined in patients with Hodgkin's (HL) and non-Hodgkin's lymphoma (NHL) and in normal healthy individuals.

Methods: The study group consisted of 17 patients (10 NHL, 7 HL; 11 men, 6 women; median age 35 years, range 19–70) and 15 healthy volunteers (11 men, 4 women; median age 49 years, range 36–67). Serum L-Selectin and P-Selectin levels were determined with ELISA (Bender MedSystems, Vienna, Austria). Data are presented as mean ± SD. Unpaired t-test was used for statistical analysis.

Results: Serum soluble L-Selectin and P-Selectin levels were significantly elevated in patients with both Hodgkin's and non-Hodgkin's lymphoma (table).

Patients (n)	L-Selectin (ng/ml)	P-Selectin (ng/ml)	p
HL (7)	1140 ± 498	875 ± 370	0.0082
NHL (10)	1137 ± 428	610 ± 211	0.0023
Controls (15)	625 ± 159	178 ± 48	

Conclusion: Differential expression of these adhesion molecules may account for distinct patterns of growth and dissemination in lymphomas. The study of adhesion molecule expression and function may allow a better understanding of the malignant behavior of lymphomas.

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POSTER

Non Hodgkin lymphoma (NHL) & hepatitis C in Egypt: Prevalence, clinical characteristics & response to therapy in a randomized controlled trial

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Hepatitis C is associated with chronic B cell stimulation, mixed cryoglobulinemia, and is implicated as a causative factor in the development of NHL. Whether the clinical characteristics of HCV associated NHL differ from HCV–ve is not known. The response to therapy has not been compared in the 2 groups, and the value of adding interferon (IFN) to treatment has not been assessed.

Aim: This study aimed at assessing the prevalence of HCV antibodies in patients with NHL in an area of Egypt with high prevalence for HCV infection, and comparing it to HCV antibody prevalence in other malignancies and to normal individuals. We also aimed at assessing the clinical characteristics of HCV associated NHL, and assessing its response to therapy using standard CHOP or CHOP+IFN compared to HCV–ve NHL in a randomized controlled manner.

Patients and Methods: Sixty consenting patients with intermediate and high grade NHL (40 males), 60 patients with other malignancies, and 60 normal asymptomatic matched controls were included. Patients and control sera were tested for anti-HCV by 2nd generation ELISA. Patients with NHL were categorized according to anti-HCV status, and the disease severity and clinical characteristics were assessed. Anti-HCV+ve patients were randomized to receive CHOP or CHOP+IFN 5 MU/day for 5 days with CHOP cycles and tiw in the interim.

Results: Forty two NHL patients were anti-HCV+ve (70%) (33 males) compared to 24 patients (40%) with other malignancies, and 22 controls (36.7%), (both $p < 0.0001$, Risk Ratio 4.03, 95% CI 1.9–8.6). Males with NHL were more likely to be anti-HCV+ve ($p < 0.005$). Clinical characteristics including stage, number of sites involved, bulkiness of disease, B symptoms, bone marrow involvement, and elevated LDH were not different in the 2 NHL groups. Complete remission (CR) was achieved in 61% of HCV–ve patients and 52% of HCV+ves ($p > 0.05$). Twenty HCV+ve patients received CHOP+IFN and 22 standard CHOP. CR was achieved in 60% and 46% respectively ($p = 0.34$). Side effects were comparable in the two groups, but significant liver dysfunction occurred in 1/18 of the anti-HCV–ves, and in 10/22 of the CHOP group and 3/20 of the CHOP+IFN group ($p < 0.05$).

Conclusion: The prevalence of HCV infection in NHL is higher than the general population and patients with other malignancies, and HCV infection