

had comparable frequencies of p15, p16, E-cad and p73 gene promoters methylation as nodal lymphoma. None of the lymphomas investigated showed methylation on VHL, Caspase 8 and hMLH1 gene promoters.

Conclusion: In gastric lymphoma, p15, p16, E-cad and p73 methylation may be important in the pathogenesis of MALToma. Also, MALToma and DLBC lymphoma may evolve through different genetic pathways. In these three types lymphoma, methylation of VHL, Caspase 8 and hMLH1 may not be of pathogenetic significance.

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POSTER

The value of thallium-201-chloride scintigraphy in staging and monitoring radiotherapy response in low-grade non-Hodgkin's Lymphoma

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Purpose: To study the value of thallium-201-chloride scintigraphy in staging and monitoring radiotherapy response in low-grade non-Hodgkin's lymphoma (LG-NHL).

Patients and Methodes: Thirty-six patients with LG-NHL referred for radiotherapy were conventionally staged by physical examination, CT-scan, chest radiograph, ultrasound, biopsy and fine-needle aspiration cytology. The combined information of these modalities was considered the "golden standard" (GS) and compared to thallium-201-chloride (TI-201) scintigraphy, which was based on planar total body imaging and SPECT of neck and thorax. SPECT of other regions was performed at indication only. All treated localizations were restaged after radiotherapy by GS modalities and TI-201.

Results: In a total of 288 regions studied (36 patients, 8 regions per patients; see the first 8 columns of the table), 115 were positive for lymphoma, 173 negative. Of these 115 true positive localizations 111 were found based on GS modalities and an additional 4 were found on TI-201 and subsequently confirmed by GS (2 axilla's, 1 parailiac and 1 femoral). All 115 localizations were irradiated and the clinical response (CR, PR, SD, PD) was evaluated by GS and TI-201 modalities 3-4 weeks later. For all localizations and time-points the sensitivity, specificity, positive predictive value, and negative predictive value were evaluated (see Table).

	Neck	Axilla	Mediast	Spleen	Para aortic	Para iliac	Femoral	Extra nodal	All except upper abdomen	All
GS (-)	16	19	26	26	22	22	16	26	125	173
GS (+)	20	17	10	10	14	14	20	10	91	115
TI-201 (+)	17	12	7	4	6	7	14	9	66	76
Sens. (%)	85	59	70	40	43	50	70	70	68	63
Spec. (%)	100	89	100	100	100	100	100	92	97	98
PPV (%)	100	83	100	100	100	100	100	78	94	95
NPV (%)	84	71	90	81	73	76	73	89	81	80
PPV after RT (%)	81	100	71	100	100	100	100	67	88	90

(Sens = sensitivity, Spec = specificity, PPV = positive predictive value, NPV = negative predictive value)

Conclusion: Due to accumulation of activity in liver, kidneys and intestine TI-201 is less adequate in upper abdominal localizations (average sensitivity 42%). A positive TI-201 accurately predicts lymphoma activity (PPV: 95%), but a negative scan misses about 20% of all true positive lymphoma localizations. If the TI-201 was positive prior to irradiation then repeat scans will accurately predict treatment response (PPV: 90%) and therefore might be useful in follow-up. Apart from upper abdominal localizations TI-201 scintigraphy is helpful in diagnosing and monitoring radiotherapy response in LG-NHL.

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POSTER

Low dose (2 x 2 Gy) involved field radiotherapy in recurrent indolent lymphomas induces rapid and lasting remissions without significant toxicity; results of the HORA-1 phase II study

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Purpose: To study the efficacy of 2 x 2 Gy involved field radiotherapy (IF-RT) in recurrent indolent lymphoma patients (pts).

Patients and Methods: IF-RT to a dose of 2 x 2 Gy (interval 48 hours) was given to all known lymphoma sites in 79 evaluable pts with recurrent indolent lymphomas, stage IV (involved bone marrow). The patient population consisted of 42 females and 37 males, median age 59 years (range 35-86 years). Median time since primary diagnosis was 44 months (range 3-358 months). Patients were pretreated by an average of 4 chemo- and/or radiotherapy regimens (range 1-11). Bulky disease (>5cm) was present in 45 patients. Histological classification and subtyping revealed follicular lymphoma in 59 patients (29 grade I, 28 grade II and 2 grade III), B-CLL/SLL in 12, extranodal marginal zone lymphoma, MALT-type, in 3, mantle cell lymphoma in 3 and lymphoplasmacytic lymphoma in 2 cases. Endpoint of the study was in-field lymphoma control.

Results: IF-RT resulted in 49% CR (n=39), 39% PR (n=31), overall response rate (RR) 88%, 8% SD (n=6), 3% PD (n=2) and a spontaneous remission in 1 patient. As expected, toxicity was very mild. Only 2 pts showed a transient grade II leukopenia. RR was independent of sex, age (< or > 59 years), intensity of prior treatment (< or > 4 regimens), time since diagnosis (< or > 44 months), histology or tumour size (< or > 5 cm). Of the 31 patients in PR, 15 developed in-field recurrence after a median time of 4 months (range 3-15 months), of whom all except 3 had bulky disease. Of the 39 patients in CR, 5 progressed in-field or out-field, after a median time of 10 months (range 3-15 months). All except 1 had bulky disease. Of the 70 responding pts 44 are ongoing upto 33 months.

Conclusion and future plans: IF-RT (2 x 2 Gy) in recurrent indolent lymphomas induces excellent RR, without significant toxicity even in a heavily pretreated patient population. This regimen is now being compared with Chlorambucil in a prospective phase III trial in previously untreated lymphoma patients (HOVON - EORTC).

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POSTER

Combined chemotherapy and radiation versus radiation alone in the management of localized angiocentric lymphoma of the head and neck

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Purpose: To clarify the clinical benefit derived from the combined use of chemotherapy (CT) and involved-field radiotherapy (RT) in the management of stage I and II angiocentric lymphomas of the head and neck.

Methods: Of the 143 patients with angiocentric lymphoma of the head and neck who were treated at the Yonsei Cancer Center between 1976 and 1995, 104 patients (RT group) received involved-field RT alone with a median dose of 50 Gy (range: 20-70 Gy), while 39 patients (CT+RT group) received a median 3 cycles (range: 1-6 cycles) of CT before starting involved-field RT. The response rate, patterns of failure, complications, and survival data of the RT group were compared with those of the CT+RT group.

Results: Despite a higher response rate, local failure was the most common pattern of failure in patients of the both groups. The patterns of failure, including the systemic relapse rate were not influenced by the addition of combination chemotherapy. Although both modalities were well tolerated by the majority of patients, aberrant immunologic disorders or medical illnesses, such as a hemophagocytic syndrome, sepsis, intractable hemorrhage, or the evolution of second primary malignancies were more frequently observed in patients of the CT+RT group. The prognosis of patients in the RT group was relatively poor, with a 5-year overall actuarial survival rate of 38.3% and disease-free survival rate of 32.4%, respectively. However, their clinical outcome was not altered by the addition of systemic chemotherapy. Achieving complete remission was the most important prognostic factor on univariate and multivariate analyses, but treatment modality was not found to be a prognostic variable influencing survival.

Conclusions: Involved-field RT alone for angiocentric lymphoma of the head and neck was insufficient to achieve an improved survival rate, but the combination of chemotherapy and involved-field RT failed to demonstrate any therapeutic advantage over involved-field RT alone.