patients rarely showed an intrasinusoidal BM infiltration pattern or a serum M component, both reported features of this type of lymphoma. As mentioned by other authors, CD5-positive SMZL cases seem to be more common that previously thought.

0715

IS DOUBLE-BALLOON ENDOSCOPY USEFUL AND NECESSARY FOR THE EVALUATION OF SMALL INTESTINE INVASION IN PATIENTS WITH NHL?

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Background and Aims. It is difficult to diagnose correctly the invasion of non-Hodgkin lymphoma (NHL) in small intestine. Recently, double-balloon endoscopy (DBE) (Fujinon Co. Ltd., Tokyo) has been produced and spread as a new and easy-to-use method of endoscopy for whole small intestine. In this study, we studied the usefulness of DBE in patients with NHL for diagnosis of invasion in small intestine. *Patients and Methods*. From February 2005 until January 2006, DBE was underwent in twelve patients with NHL. Six patients were systemic NHL, five patients were gastric NHL, and one patient was rectal NHL. They were seven males and five females, with an average age of 63.6 years (range: 48 to 78). The pathological findings were 7 diffuse large B cell lymphoma (DLBCL), 2 follicular cell lymphoma (FCL), 1 Maltoma, 1 mantle cell lymphoma, and 1 IPSID. DBE was basically twice done in every case both from mouth and anus on different day as possible. All patients were also underwent biopsy at DBE. *Results.* DBE was safely underwent in all 12 patients. Characteristic endoscopic findings of small intestine were revealed in six patients with NHL. However, in only 4 patients, biopsy specimen showed positive. In the rest two patients, there was no pathological finding of NHL, which was considered due to chemotherapy at the previous hospitals. Both of two FCL cases had endoscopic and pathological findings in the small intestine. They were diagnosed intestinal perforation because of chemotherapy at the previous hospitals. If they were noticed that their NHL was invasive in small intestine, we were able to speculate their small intestine might be performed after chemotherapy. Only 2 gastrointestinal NHL patients had small intestinal lesion. On the other hand, 3 systemic NHL patients had also invasion in small intestine. Especially, IPSID patient was diagnosed with only DBE. Aspiration pneumonia was happened in one patient. Other severe complication was not found. *Conclusions.* DBE was valuable for diagnosis of NHL invasion in small intestine. DBE must be selected before chemotherapy for NHL.

0716

NODAL VS. PRIMARY EXTRANODAL DIFFUSE LARGE B-CELL LYMPHOMAS: A COMPARISON OF PRESENTING FEATURES, RESPONSE TO TREATMENT AND OUTCOME

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Background. Diffuse large B-cell lymphomas (DLBCL) represent the commonest subtype of non-Hodgkin's lymphomas (NHL) in Western countries, comprising 30% of the total. Marked heterogeneity in aspects of morphology, immunophenotype and genetics is their main characteristic. Approximately 30% of them are of primary extranodal origin. It has already been proposed that nodal and extranodal DLBCL could be regarded as two distinct clinical entities, since molecular differences between them suggest a different genetic origin. *Aim.* To assess the main clinical presenting features, response to treatment and outcome of a large number of patients with DLBCL according to the primary site of origin, nodal or extranodal. *Methods.* Between 1976 and 2005, 398 consecutive patients with DLBCL were treated in our department. CHOP and CHOP-like regimens were administered to a total of 353 (88.8%) patients, 60 (17%) of which received additionally radiotherapy, 74 (21%) rituximab and 35(9.9%) both radiotherapy and rituximab. Patients were divided in group A, that comprised 188 (47.2%) patients with DLBCL of primary nodal origin and group B, that consisted of 210 (52.8%) patients with DLBCL of primary extranodal origin. Patients' characteristics (gender, age, stage, IPI, presence of B symptoms, bulky disease and bone marrow infiltration), the kind of treatment (chemotherapy±rituximab±radiotherapy) and response rates were compared between the two groups using $\chi 2$ tests. Disease-free survival (DFS), overall survival (OS) and failure-free survival (FFS) were estimated according to the Kaplan-Meier method. Differences in survival rates were assessed using the log-rank test. *Results.* Group B patients presented with early stage disease (I-II, no bulky disease), low IPI (0-1), no B symptoms, and no bone marrow infiltration with a significantly higher frequency than group A patients (83.8% vs. 45.7%, 62.8% vs. 39.9%, 20% vs. 34.6%, 2.4% vs. 12.2% respectively, $p<0.003$). Patient distribution according to the kind of treatment administered, was not different between the two groups ($p> 0.05$). Median follow-up time for groups A and B was 55 (1-425) and 56 (1-428) months respectively ($p> 0.05$). On an intention-to-treat basis, complete response rates were similar between groups A and B (81.9% vs. 84.8% respectively, $p>0.05$). Actuarial 5-year DFS rate was significantly higher in group B compared to group A (80% vs. 68.3% respectively, $p=0.006$). Actuarial 5-year OS and FFS rates were not significantly different between groups A and B (71.3% vs. 70.3% and 55.2% vs. 61.4% respectively, $p>0.05$). *Conclusion.* In our study, patients with DLBCL of primary extranodal origin demonstrated more favorable presenting clinical features and a higher DFS rate than patients with nodal DLBCL. Nevertheless, OS and FFS rates did not seem to be affected by the primary site of origin.

0717

THE LATE CARDIOTOXICITY OF DOXORUBICIN CONTAINING REGIMENS IN THE TREATMENT OF MALIGNANT LYMPHOMAS

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Backround. Chronic cardiotoxicity of doxorubicin occurs later than one year after completion of the chemotherapy and it represents a serious late treatment related complication. *Aims.* to determine the occurence of late clinical and subclinical doxorubicin cardiotoxicity and the cardiopulmonary performace status in the patients surviving more than 5 year after primary treatment for lymphoma. *Methods.* 96 patients with Hodgkin´s and non-hodgkin´s lymphoma treated in the period 1995 ' 2000 at our department were consecutively included in the prospective study. Male/female ratio 47/49, median age 41 (23-79), median follow-up 6 years (5-10). The maximum cumulative dose of doxorubicin (CD DOX) used in the treatment protocols was 377+147 (median 300, 50-880) mg/m^2. 32 (33%) of the patients received another treatment after primary regimen for high risk disease at the time of diagnosis or for later relapse. Patients were examined by rest echocardiography before initial treatment, after its completion and at the minimum of 5 years folow-up in the survivors. Dynamic stress echocardiography and cardiopulmonary exercise test were performed during control examination. Decline of left ventricular ejection fraction (LVEF) below 50%, progression of decline of LVEF > 10% compared to baseline value and drop-off of peak oxygen consumption pVO2<20 mL/kg/min were considered as pathological. Doppler parameters of left ventricular diastolic function and index of global left ventricular function (myocardial performance index, MPI) were evaluated too. *Results.* Clinical signs of cardiotoxicity were observed in 4% of pts, subclinical cardiotoxocity in 31%. Impairment of diastolic function was present in 38% pts and a pathologic value of MPI in 31% pts. A stress increment of EF was 13+4% (median 12; 5-25). Decreased value of pVO2 was find out in 15% patients. Decrease of LVEF significantly correlates with duration of folow-up after treatment. The risk factors for late cardiac toxicity detected in multivariante analysis were CD DOX > 300 mg/m^2, pre-existence of cardiovascular diseases and age >60 (for CD DOX $p<0.05$; age $p<0.01$; concomitant cardiovascular disease $p< 0.01$, r= 0.57 and $p<0.02$ for whole model). Additional treatment following the initial treatment is associated with higher risk only for finding of diastolic dysfunction (OR=2.37, $p<0.05$), but not for drop of LVEF. Reduced cardiopulmonary performance was diagnosed only in 15% of survivors and is signifficantly affected by age and diastolic impairment. *Summary/Conclusions.* Our data demonstrate, that cardiac function should be long-term monitored at least by means of rest echocardiography in patients after antracycline containing regimens.

0718

PROGNOSTIC SIGNIFICANCE OF GAMMA-DELTA T CELL RECEPTOR EXPRESSION IN BONE MARROW LYMPHOCYTE POPULATION OF LYMPHOMA MALIGNUM PATIENTS

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Background. Gamma-delta T lymphocytes ($\gamma\delta$T) appear to posses intrinsic cytolytic antitumour activity in different carcinomas, sarcomas, myeloma and leukemia. Activated $\gamma\delta$ T cells express antigens CD25+