According to the staging system of gastrointestinal tract lymphoma by Rohatiner
Nineteen patients (70%) had no symptoms at the time of diagnosis. The most
pathological analysis. Cytogenetics using FISH to detect IGH/BCL2 fusion were
National Cancer Center Hospital between 1999 and 2007 were subject to clinico-
Patients and Methods:
Little is known about the primary duodenal follicular lymphoma (DFL).
Background:
In advanced ‘asymptomatic’ FL watchful waiting has been standard
measures after randomisation.
Results:
252 patients participated in the QoL study with a compliance rate of >80%.
Median age was 59 years and 45% were male. The mean FACT emotional wellbeing
analyzed according to the European standard population (sIR).
Results: In total, 1551 FL cases (median age: 59 yrs) were diagnosed in the period 1983-
2004. Of these, 26% (n=399) were yFL (median age: 43 yrs, range 15-49 yrs).
their median follow-up was 10 yrs (range: 4 days–22 yrs). In contrast to the total FL
population, showing a moderate incidence increase throughout the study period, yFL
had a stable SIR rate of ca 1.010/yr. Histologically, 9% of yFL had grade 3
morphology; 71% had disseminated disease and 7% primary extranodal lesions. In
14% of yFL, s-DLI was elevated at presentation. Of 112 cases undergoing biopsy at
relapse, 20% revealed histologic transformation. The corresponding value in the FL
cohort 256 yrs was 30%. The overall survival curve for yFL showed a linear decrease
with a median survival of 15.5 yrs as compared to 7.2 yrs for the older cohort.
Conclusion: The present data on incidence, clinico-pathological features and survival
in yFL provide a baseline comparative tool for the elaboration of yFL-specific
prognostic models and clinical trials.

311 FOLLOWULAR LYMPHOMA IN YOUNG PATIENTS (<50 YRS): A POPULATION-BASED ANALYSIS OF THE DANISH LYMPHOMA REGISTRY
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Background: Follicular lymphoma (FL) is an incurable disease with a median survival
of 7-10 yrs and a median age of 60-65 yrs at diagnosis. However, FL also occurs in
younger yrs where intensified therapies may be curative. Data on younger FL pts (yFL)
are scarce. The purpose of this analysis was to provide specific data for yFL (age 15-49 yrs)
drawn from the Danish population-based LYFO registry.
Patients and Methods: Histological diagnoses were validated by a pathology panel. All
reported clinico-pathological features are pre-therapeutic. Incidence rates were
standardized according to the European standard population (sIR).
Results: In total, 1551 FL cases (median age: 59 yrs) were diagnosed in the period 1983-
2004. Of these, 26% (n=399) were yFL (median age: 43 yrs, range 15-49 yrs). Their
mean follow-up was 10 yrs (range: 4 days–22 yrs). In contrast to the total FL
population, showing a moderate incidence increase throughout the study period, yFL
had a stable SIR rate of ca 1.010/yr. Histologically, 9% of yFL had grade 3
morphology; 71% had disseminated disease and 7% primary extranodal lesions. In
14% of yFL, s-DLI was elevated at presentation. Of 112 cases undergoing biopsy at
relapse, 20% revealed histologic transformation. The corresponding value in the FL
cohort 256 yrs was 30%. The overall survival curve for yFL showed a linear decrease
with a median survival of 15.5 yrs as compared to 7.2 yrs for the older cohort.
Conclusion: The present data on incidence, clinico-pathological features and survival
in yFL provide a baseline comparative tool for the elaboration of yFL-specific
prognostic models and clinical trials.

312 PATTERNS AMONG FOLLOWULAR LYMPHOMA PATIENTS IN SEER-MEDICARE
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Background: Recent data from randomized clinical trials and observational studies
demonstrate improved progression free and overall survival among follicular
lymphoma (FL) patients. The objective of our study was to evaluate the effect of patient
characteristics, disease severity and chemotherapeutic regimens (CT) on survival.
Methods: Using the SEER-Medicare dataset, we identified patients with a first primary
FL diagnosis (by histology) between 1998-2002, with follow up through 2005. We
evaluated survival times in months from diagnosis date to date of death. Time to death
was assessed using Cox proportional hazards regression with censoring for end of
coverage. Models were adjusted for age, gender, histology, stage, and anemia or
lymphocytopenia diagnosis within 1 month of the FL diagnosis. We identified
factors for CT and rituximab (R) in the first three months following diagnosis.
Results: 2,053 patients met the inclusion criteria. The mean age was 75.7. The
median survival time (censoring for end of coverage) was 56 months (95% CI 24–84 months).
First CT regimens were distributed as: CT with R (30.4%), CT without R (29.5%) and
No treatment in three months following diagnosis (20%). Increasing age and stage,
and the presence of anemia or lymphocytopenia were significantly associated with
shorter times to death (p<0.05). Female gender, Grades 1/2 follicular histology (vs.
histology not otherwise specified), and CT with R (vs. CT without R) were significantly
associated with longer times to death (p<0.05).
Conclusions: CT with R vs. CT without R is associated with increased survival time in
the Medicare population diagnosed with FL between 1998 and 2002. Additionally,
female gender, Grades 1/2 follicular histology were significantly associated with greater
survival (p<0.05).

310 AN INDOLENT COURSE AND T(14;18) IN PRIMARY DUODENAL FOLLICULAR LYMPHOMA
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Background: Little is known about the primary duodenal follicular lymphoma (DFL).
Patients and Methods: Twenty-seven patients with primary DFL diagnosed at the
National Cancer Center Hospital between 1999 and 2007 were subject to clinico-
pathological analysis. Cytogenetics using FISH to detect IGH/BCL2 fusion were
carried out.
Results: Nineteen patients (70%) had no symptoms at the time of diagnosis. The most
common site of involvement was the descending part of the duodenum (89%).
According to the staging system of gastrointestinal tract lymphoma by Rehnstine et al.,
17 patients had Stage I, 7 had II and 3 had IV. FL International Prognostic Index
(FIPI) risk was low in 25 patients (92%) and intermediate in 2 (8%). Nineteen
patients (79%) had histological grade I, 7 (28%) had grade 2 and 1 (4%) had grade 3a.
IGH/BCL2 fusion was present in 20 (83%) among 24 patients examined. This figure
was high when compared with that in a previous study of Japanese patients with
nodal FL, where 60% of the patients demonstrated the fusion. All the patients have
survived with a median follow-up time of 30.9 months (3.4-100.4). One patient
was lost for follow-up. Eleven patients received no treatment initially; their estimated
therapy-free survival rates after 1, 2 and 3 years were 80%, 60% and 60%, respectively,
with a median follow-up time of 11.1 months (3.4-69.5). Fifteen patients received
therapy upon diagnosis (local radiotherapy in 3 patients and chemotherapy in 12
including rituximab therapy); their overall response rate was 80%, and their estimated
progression-free survival rates after 1, 2 and 3 years were 85%, 57% and 57%,
respectively, with a median follow-up time of 17.9 months (3.2-78.1). Among the 3
patients who received local radiotherapy, only one (4%) developed histological
transformation with relapse at the jejunal lymph node.
Conclusions: The majority of primary DFL is positive for t(14;18), localized, of low
grade morphology and with low FLIPI risk. A watch and wait policy might be an
alternative approach for its indolent course; however, further studies are warranted.

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313 GRUPPO ITALIANO STUDIO LINFOMI (GISL) CRITERIA FOR DEFINING DISEASE-PROGRESSION IN INDOLENT NON FOLLICULAR LYMPHOMA

The GDSL prospectively evaluated 157 pts with INFL meeting criteria of no therapy for at least 3 months after diagnosis in different GDSL centers between July 1993 and December 2004. Pts were considered eligible for this prospective study if they had a diagnosis of SL, LP, SMZ or NMZ, extranodal non-gastric MALT. Indolent disease was defined by the absence of followings: B symptoms, bulky disease (i.e. a nodal involvement > 5 cm), HB level < 10 g/dL, PLT count < 100 x 10^9 /L, diffuse pattern of BM involvement and a quick increase in the size of nodal involved sites (i.e., doubling time < 12 mos.). After a median follow-up time of 48 mos. (range, 3-169) 37 out of 139 evaluable pts experienced significant disease-progression and consequently indication for treatment. The proportion of pts not requiring chemotherapy at 3, 5 and 6 years was 80% (95% CI, 72-86%), 72% (95% CI, 62-80%) and 63% (95% CI, 51-74%), respectively. Factors associated with a shorter time to first treatment (TFT) were the serum biomarkers. Intrinsic factors independently associated with shorter TFT in multivariate analysis were serum sCD27 (HR 3.02, P<0.01) and serum FLC k (HR 1.56, P<0.004). Interestingly, history corrected by FLPI led to a 37% increase of regression coefficient, thus FLPI increases the discriminant power of histology. As a matter of fact, median TFT was significantly longer in pts with SL/LP histology and FLPI > 0.2 in comparison to pts with same histology and FLPI < 0.2 (median TFT 106 vs 15 mos.). The same did not apply for pts with SMZ/NMZ or non-gastric MALT histology (P=0.518). We confirm that SMZ/NMZ or non-gastric MALT lymphoma have a different clinical behaviour in comparison to SL or LP lymphoma and should be considered as different entities. FLPI represents an important step in identifying patient subgroups with predictable outcome among those with SL/LP lymphoma.

314 SOLUBLE CD27 LEVELS ARE CORRELATED WITH DISEASE STAGE AND RESPONSE TO TREATMENT IN WALDENSTRÖM’S MACROGLOBULINEMIA (WM)

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Introduction: Soluble CD27 (sCD27), a TNF-R family member which supports the survival of WM tumor cells through CD40L signaling, is elevated in the sera of patients with WM and appears to be a reliable marker of disease burden (Ho et al, Blood, 2004). We therefore sought to determine its potential role in the prognosis and staging of WM patients.

Methods: We retrospectively assessed the baseline levels of sCD27 in 149 previously untreated WM patients by ELISA (Bender Mendl system). Sera from healthy, age-matched donors (HD) was used as a control. sCD27 levels were examined in association with the ISS prognostic system that has been reported to affect clinical outcome in WM (Dimopoulos et al, 2006). The statistical analysis was performed using the SAS software.

Results: sCD27 levels were significantly higher in WM patients (median 90.08, range 12.4-5.256) compared to HD (median 45.7, range 24.7-87.8 U/mL) (p=0.009), with 109/149 (73%) patients demonstrating sCD27 levels which were higher than the mean level observed in healthy donors. Importantly, we observed a correlation with higher sCD27 levels and more advanced ISS staging. Mean sCD27 levels among the 3 ISS groups using ANCOVA analysis were as follows: stage I (n=93) 99.88 vs stage II (n=34) 136.74 vs stage III (n=16) 168.75 U/mL (p=0.0274). No significant differences in sCD27 levels between symptomatic and asymptomatic patients were observed. Lastly, among patients in this cohort who subsequently received treatment, we observed higher rates of response (34/50 (68%) vs. 16/30 (52%); p=0.0006) among patients with sCD27 levels >47 U/mL.

Conclusions: sCD27 levels are elevated in patients with WM, and correlate with the WM ISS staging system. Moreover, sCD27 may predict response to therapy in patients with WM.
chemotherapy only 9 (7%) had hepatotoxicity (p=0.08), 57% achieved CR and 22% PR. 34 pts (21%) did not complete planned treatment (20 progression, 8 liver toxicity, 6 non-liver toxicity). Median PFS for pts who experienced liver toxicity is significantly shorter than median PFS of pts without liver toxicity (respectively 2 yrs and 3.7 yrs, p=0.03). After a median F-UP of 2 yrs, 32 pts died (22 NHL, 3 hepatic failure, 7 other causes). In conclusion, a significant proportion of pts with HCV+ NHL develop liver toxicity often leading to interruption of treatment. This is an important topic in the application of effective modern immuno- and chemotherapy programs. HCV+ lymphomas represent a distinct clinical subset of NHL that deserves specific clinical approach to limit liver toxicity and ameliorate survival.

317 PROGNOSTIC INFLUENCE OF TUMOR-INFLITRATING MAST CELLS IN FOLLICULAR LYMPHOMA PATIENTS TREATED WITH RITUXIMAB AND CHOP

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Introduction: Gene expression profiling and immunohistochemical studies have demonstrated that nonmalignant tumor infiltrating inflammatory cells contribute to clinical outcome of FL patients. Particularly, tumor-associated macrophage (TAM) content correlates with longer survival rates in immunochemotherapy-treated patients. The purpose of this study was to investigate the prognostic importance of tumor-associated mast cells (MCs) and their relation to TAMs in FL patients treated with combination of rituximab and CHOP chemotherapy.

Materials and Methods: Tumor samples from 98 FL patients, of whom 70 received R-CHOP at diagnosis and 28 at relapse, were stained with Leder stain for naphthol-ASD-chloroacetate esterase, or antibody against tryptase to detect MCs. MC content was correlated with survival parameters.

Results: A significant correlation was observed between Leder stain and tryptase positive cell counts (r =0.658; p<0.001). According to Kaplan Meier estimates, the patients with high MC content had a worse 5-year progression free survival (PFS) after R-CHOP therapy (33% vs 66%, p=0.020). The adverse prognostic value of MCs was seen both for the patients treated at diagnosis and at relapse, whereas no such impact on PFS was observed for the control patients treated with chemotherapy only (p=0.4). When the TAM-related PFS was analyzed separately in patients with high and low MC contents, the positive prognostic effect of TAM was seen only in patients with few MCs.

Conclusions: The data demonstrate that high MC score is associated with unfavourable prognosis and it eliminates the positive prognostic value of TAMs in FL patients treated with immunochemotherapy.

318 MDM2 309 AND TP53 ARG272PRO SNP GENOTYPES DO NOT PREDICT CLINICAL OUTCOME OF FOLLICULAR LYMPHOMA

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Introduction: Sequential biopsy analysis has shown the relevance of genetic alterations in the expression of proteins with known roles in hematological malignancies, including lymphoma. Expression of p16 INK4a may reflect induction following MDM2 and earlier onset, increased risk or worse prognosis of several solid tumours and MDM2 expression in progression of Follicular Lymphoma (FL). Tumour samples from 98 FL patients, of whom 70 received R-CHOP at diagnosis and 28 at relapse, were analysed for MDM2 Arg72Pro SNPs via an Allelic Discrimination multiplexed endpoint assay (Applied Biosystems). Direct sequencing on a subset of 24 FL tumor samples was performed. The findings were compared to previously published results.

Material and Methods: DNA from bone marrow / peripheral blood / lymph nodes of 240 patients with FL (including 81 transformed cases) were obtained from the tissue archives at St. Bartholomew’s Hospital. Average age at diagnosis was 49 years. Samples were analysed for MDM2 309 and TP53 Arg272Pro SNPs via an Allelic Discrimination multiplexed endpoint assay (Applied Biosystems). Direct sequencing on a subset of samples confirmed the results. Samples were selected on DNA availability.

Results: Allele frequencies of the cohort were similar to previously published results (for MDM2 309 T>G SNP these were 44%, 46%, 47%, 12% for T>G, G>T respectively for TP53 Arg272Pro these were 47%, 46%, 46%, 27%). Average age at diagnosis for the genotypes were similar to that of the cohort being 48, 48 and 49 years respectively for MDM2 309 and 49, 49 and 47 years respectively for TP53 Arg272Pro. There was no association of MDM2 SNP 309 genotypes (either in isolation or in combination with TP53 Arg272Pro SNP genotypes) with gender, stage at diagnosis, response to first line therapy or best response to therapy nor overall survival, progression and relapse free survival or time to transformation.

Conclusion: Although deregulation of the MDM2-TP53 pathway is a feature of FL and its progression, reported variants (MDM2 309 and TP53 Arg272Pro) do not predict its clinical course.
possibility that some of the rearrangements may represent alleles that pre-dispose to disease.

321 EXAMINATION OF CHANGES IN TUMOUR MICROENVIRONMENT OF FOLLICULAR LYMPHOMA USING SERIAL SAMPLE TISSUE MICROARRAYS

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Background: There is mounting evidence that the immune microenvironment in FL is important in patient outcome, but little data on the changes in immune microenvironment over disease progression and impact on outcome. The goal of this study was to examine the immune microenvironment in patients with FL over the course of their disease and correlate this to transformation and overall survival.

Materials and methods: TMAs were constructed from 1mm cores in triplicate from 45 patients with more than 2 biopsies during the course of their FL. The number of biopsies ranged from 2 to 6 and initial diagnostic biopsies were always included. Immunohistochemistry was performed on the TMAs using a panel of antibodies detecting antigens on T cells, regulatory T cells (FOXP3), macrophages (CD68) and follicular dendritic cells (FDC). The immune infiltrates were scored for number and location. The FDCs were scored on the presence of the FDC meshwork (disrupted versus non disrupted).

Results: The median age of the patients at diagnosis was 48.5 years (range 26-77), median FLIPI score was 5 (n=56), median stage was 4 (n=36). Fifteen of the patients transformed to DLBCL. Median OS was 96 months and the median time to transformation was 76 months. Changes in the levels of immune infiltrating cells in serial biopsies were analysed. Patients in whom the number of CD68+ cells decreased or remained <5 cells/hpf (n=21) had an increased median time to transformation (49 months) and overall survival (100.5 months) as compared to patients in whom the number of CD68+ cells increased or remained ≥5 cells/hpf (n=19). The time to transformation in these patients was 25 months and OS was 71 months. Alterations in the number of T cell subsets and integrity of the FDC meshwork were not associated with time to transformation or OS.

Conclusions: The results reaffirm the complex nature of the interaction between the immune microenvironment and the FL cells. Patients with biopsies containing persistently high numbers of CD68+ cells at any point in their disease have a worse outcome than patients with low numbers.

322 GENETIC ALTERATIONS ASSOCIATED WITH RELAPSE AND PROGRESSION OF FOLLICULAR LYMPHOMA STUDIED IN SERIAL BIOPSIES

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Results of the randomized FL2000 study comparing chemotherapy plus aFN (CHVP+I) versus Rituximab plus CHVP+I in 358 follicular lymphoma patients (pts) were recently updated and demonstrated a superior outcome for patients receiving R-CHVP-I: 5-year event-free survival (EFS) estimates were respectively of 37% and 53% in the CHVP+I and R-CHVP+I arm (P<0.004) (Salles et al. ASH2007). However, an overall survival (OS) advantage appeared to be restricted to pts presenting a high (>2) FLIPI score (P=0.025). Outcome was markedly different in each FLIPI subgroup. To further characterize which pts benefited of the addition of rituximab, we examined individually each of the FLIPI factors. Age over 60 years, Ann Arbor stage III-IV (AA stage), hemoglobin level <12 g/dl (Hb), LDH level above normal value (LDH), and number of nodal sites > 4 (nodal sites) were then tested for their influence on patient’s outcome in the whole trial and in the 2 separate study arms. Considering all patients in univariate and multivariate analyses, age did not significantly influenced EFS, while AA stage, nodal sites, LDH, and Hb all did. However OS was significantly affected by age, LDH and Hb but not by nodal sites or AA stage. Other factors such as extranodal sites, bone marrow involvement, B2-microglobulin and albumin levels did not significantly affected the multivariate models. Considering CHVP-I pts, multivariate analysis identified nodal sites (RR=1.64; P=0.002), LDH (RR=1.46; P=0.006) and Hb (RR=2.12; P=0.043) as predictors of EFS as well as age (RR=2.83; P=0.0035), LDH (RR=2.30; P=0.014) and Hb (RR=2.59; P=0.019) as predictors of OS. In contrast in R-CHVP-I pts, only nodal sites (RR=1.89; P=0.017) predicted EFS and Hb (RR=2.55; P=0.012) and LDH (RR=2.42; P=0.042) OS. We conclude that 1) among FLIPI factors, the number of nodal site appears to be a strong predictor of EFS in pts receiving or not rituximab while age, LDH and Hb levels are strong predictors of OS and 2) that OS of in rituximab treated pts is influenced by Hb and LDH levels but not by age or other factors.

324 PCR FOR BCL-2/Igh+ CELLS IN STAGE I/IIFOLLICULAR LYMPHOMA IDENTIFIES POSITIVE CELLS IN BONE MARROW AND PERIPHERAL BLOOD OF THE MAJORITY OF PATIENTS, THAT CAN BE CLEARED BY LYMPH NODE IRRADIATION

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Background: Stage I/IIA follicular lymphoma (FL) is considered a localized disease that can be adequately treated with radiotherapy alone. Minimal Bcl-2/Igh+ cell contamination in the peripheral blood (PB) or bone marrow (BM) can be detected by quantitative and qualitative PCR. Aim of this study was to evaluate the role of PCR, the impact of radiotherapy and prognosis in localized FL.

Methods: PB and BM Bcl-2/Igh+ cell involvement in FL was investigated by PCR in a series of 25 consecutive stage I/IIA patients with histologically-revised diagnosis and treated with involved field radiotherapy alone.

Results: Despite a negative BM biopsy, Bcl-2/Igh+ cells were found at diagnosis in the PB and/or BM of 17 patients (68%). After lymph node involved field radiotherapy, in 10/16 Bcl-2/Igh+ positive patients, a disappearance of Bcl-2/Igh+ cells was observed in the affected lymph node(s) to PB and BM, and durably disappear after lymph node irradiation. Patients with Bcl-2/Igh+ cells at diagnosis or after treatment had a higher likelihood of relapse. The possibility of a persistent lymphoma cell clearance is proportional to the amount of cells detected at presentation by quantitative PCR. Rituximab can reverse molecular relapses.

325 IMMUNO-PET/CT IMAGING WITH 90Y-RITUXIMAB AS A PRELUDE FOR RADIOIMMUNOTHERAPY WITH 90Y-RITUXIMAB IN PATIENTS WITH RELAPSED CD20+ B-CELL NON-HODGKIN’S LYMPHOMA

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324 PCR FOR BCL-2/IgH+ CELLS IN STAGE I/IIFOLLICULAR LYMPHOMA IDENTIFIES POSITIVE CELLS IN BONE MARROW AND PERIPHERAL BLOOD OF THE MAJORITY OF PATIENTS, THAT CAN BE CLEARED BY LYMPH NODE IRRADIATION

A. Pulsoni1, I. Della Starza1, N. Frattarelli1, E. Carlotti2, E. Cavalieri1, E. Ghia1, A. Maffoni1, F. De Angelis1, A. Rambaldi1, R. Foa1

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Background: Stage I/IIA follicular lymphoma (FL) is considered a localized disease that can be adequately treated with radiotherapy alone. Minimal Bcl-2/IgH+ cell contamination in the peripheral blood (PB) or bone marrow (BM) can be detected by quantitative and qualitative PCR. Aim of this study was to evaluate the role of PCR, the impact of radiotherapy and prognosis in localized FL.

Methods: PB and BM Bcl-2/IgH+ cell involvement in FL was investigated by PCR in a series of 25 consecutive stage I/IIA patients with histologically-revised diagnosis and treated with involved field radiotherapy alone.

Results: Despite a negative BM biopsy, Bcl-2/IgH+ cells were found at diagnosis in the PB and/or BM of 17 patients (68%). After lymph node involved field radiotherapy, in 10/16 Bcl-2/IgH+ positive patients, a disappearance of Bcl-2/IgH+ cells was observed in the affected lymph node(s) to PB and BM, and durably disappear after lymph node irradiation. Patients with Bcl-2/IgH+ cells at diagnosis or after treatment had a higher likelihood of relapse. The possibility of a persistent lymphoma cell clearance is proportional to the amount of cells detected at presentation by quantitative PCR. Rituximab can reverse molecular relapses.
Background: Immuno-PET combines the high sensitivity of PET with the specificity of a monoclonal antibody (mAb). Zirconium-89 is a positron emitter with a half-life of 78.4 hours, which is compatible with the time needed for an intact mAb to achieve optimal tumour-to-background ratios. The antigen CD20 provides an excellent target because it is expressed on the surface of most B cells and is neither shed nor internalized on antigen binding. The aim of this study was to evaluate the performance of 89Zr-rituximab immuno-PET/CT in patients with CD20+ B-cell NHL.

Materials and Methods: Five patients with relapsed CD20+ B-cell non-Hodgkin’s lymphoma were included in this study. Similarly to the Zevalin® treatment schedule, each patient received a first infusion of cold rituximab at 250 mg/m² followed by the injection of 3-4 mCi 89Zr-rituximab and one week later, the same infusion of rituximab followed by radioimmunotherapy with 90Y-rituximab. 89Zr-rituximab-PET/CT was performed at 4 time points: 1 hour, 24 hours, 3 days and 6 days after the intravenous injection of 89Zr-rituximab. A baseline 90Y-PEI-PET/CT was performed 1 to 4 weeks before the first intravenous infusion of 90Y-rituximab.

For the evaluation of pharmacokinetics, blood samples were taken at the following time points: 0, 30 min, 1, 2, 4, 6, 12, 18 and 24 h after the injection of the tracer and was used as a reference dose for radioimmunotherapy with 90Y-Rituximab. PET/CT imaging with 89Zr-rituximab provides high quality images up to 1 week after the injection of 3 mCi of 89Zr-rituximab. The highest lesion to background ratio was found on the late images (6 days p.i.). Two out of 5 patients showed more lesions on 89Zr-rituximab-PET/CT compared to 90Y-PEI-PET/CT.

Results: PET/CT imaging with 89Zr-rituximab provides high quality images up to 1 week after the injection of 3 mCi of 89Zr-rituximab. The highest lesion to background ratio was found on the late images (6 days p.i.). Two out of 5 patients showed more lesions on 89Zr-rituximab-PET/CT compared to 90Y-PEI-PET/CT.

Conclusion: These preliminary findings show that 89Zr-rituximab immuno-PET/CT imaging provides high quality images up to 1 week after the injection of the tracer and is an excellent imaging tool for dosimetry as a prelude for radioimmunotherapy with 90Y-Rituximab.
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**Introduction:** We report the 50-months-follow-up data of our phase III trial comparing MCP - chemotherapy vs Rituximab + MCP both followed by interferon maintenance in advanced symptomatic follicular lymphoma.

**Methods:** Previously untreated patients with advanced stage, symptomatic CD 20-positive indolent NHL and mantle cell lymphoma (n=358) were randomized to either MCP-chemotherapy (mitoxantrone 8 mg/m² d1+2, chlorambucil 33 mg/m² d1-5, prednisolone 25 mg/m² d 1-5 x 8 q 4 weeks) or MCP + Rituximab (375 mg/m² d 1). Here we report the results of the follicular lymphoma patients (grade 1+2), who represented the majority of patients and for whom the sample size was calculated, so this is not a subgroup analysis. Study endpoints included overall and complete response rate (RR + CR), progression free survival (PFS), event free survival (EFS), time to next treatment (TTNT), overall survival (OS) and toxicities.

**Results:** median follow up of 50 months. Concerning toxicities there was no striking difference.

For the FL – ITT population the results are as follows:

<table>
<thead>
<tr>
<th></th>
<th>R-MCP (n=105)</th>
<th>MCP (n=96)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response rate</td>
<td>92%</td>
<td>75%</td>
<td>.0004</td>
</tr>
<tr>
<td>Complete response</td>
<td>50%</td>
<td>25%</td>
<td>.0009</td>
</tr>
<tr>
<td>PFS median</td>
<td>NR</td>
<td>29 mo</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>PFS 50 mo</td>
<td>50%</td>
<td>36%</td>
<td></td>
</tr>
<tr>
<td>EFS median</td>
<td>NR</td>
<td>25 mo</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>EFS 50 mo</td>
<td>66%</td>
<td>31%</td>
<td></td>
</tr>
<tr>
<td>TTNT median</td>
<td>NR</td>
<td>28 NR</td>
<td>.0002</td>
</tr>
<tr>
<td>No retreatment at 50 mo</td>
<td>60%</td>
<td>32%</td>
<td>.0025</td>
</tr>
<tr>
<td>OS median</td>
<td>NR</td>
<td>NR</td>
<td>.0205</td>
</tr>
<tr>
<td>OS 50 mo</td>
<td>86%</td>
<td>74%</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusions:** Concerning all end points Rituximab plus MCP is significantly superior to MCP alone. After a median follow-up of 50 months we can demonstrate significant survival advantage for the immunotherapy. At the 10th ICML up datal results will be provided.

**330 THE ADDITION OF RITUXIMAB TO FRONTLINE CHEMOTHERAPY SIGNIFICANTLY IMPROVES TIME TO TREATMENT FAILURE AND RESPONSE DURATION IN ALL FLIPI RISK GROUPS OF PATIENTS WITH ADVANCED-STAGE FOLLICULAR LYMPHOMA: RESULTS OF A RANDOMIZED TRIAL OF THE GERMAN LOW-GRADE LYMPHOMA STUDY GROUP.**

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**Background:** The addition of rituximab to frontline chemotherapy has been shown to improve response rates, response duration and time to treatment failure in advanced stage follicular lymphoma patients. We asked whether this benefit is seen in patient subgroups of different prognoses, as defined by the recently developed follicular lymphoma international prognostic index (FLIPI).

**Methods:** Data of a randomized GLSG trial recruiting advanced stage follicular lymphoma patients, who were in need of therapy, from May 2000 to August 2003 were used to compare overall response rates (ORR), time to treatment failure (TTF), and response duration (RD) after CHOP versus R-CHOP induction therapy according to FLIPI risk groups.

**Results:** Of 566 evaluable patients, 70 (12%) patients were classified as low risk (LR), 241 (43%) as intermediate risk (IR), and 255 (45%) as high risk (HR) according to FLIPI. Overall response rates for R-CHOP vs. CHOP were 97% vs. 87% (p=0.16) in the LR group, 97% vs. 92% (p=0.08) in the IR group and 96% vs. 91% (p=0.13) in the HR group. With a median follow-up of 4.3 years, the 5-years TFF was 83% vs. 68% (p=0.01) in the IR group, 74% vs. 38% (median not reached vs. 4.3 years, p=0.0001) in the LR group, and 52% vs. 22% (median 5.0 vs. 2.3 years, p=0.0001) in the HR group.

**Conclusions:** The benefit of rituximab was clearly observed in all FLIPI risk groups justifying the use of combined immuno-chemotherapy in all patients with advanced stage follicular lymphoma in need of therapy.

**331 PHASE 3 RANDOMIZED FIRST-LINE INDOLENT TRIAL (FIT) OF CONSOLIDATION OF FIRST REMISSION WITH 90Y-IBRUTINUMAB TUXETAN (ZEVALIN) IN ADVANCED FOLLICULAR NON-HODGGIN'S LYMPHOMA (FL)**

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**Introduction:** On Behalf of the German Low-Grade Lymphoma Study Group (GLSG) we conducted a phase 3 trial to evaluate the efficacy and safety of consolidation with Zevalin (Zev) radioimmunotherapy in patients with advanced FL.

**Methods:** Major eligibility criteria: CD20+ grade 1 or 2 FL, stage III/IV at diagnosis, normal peripheral blood cell counts, <25% bone marrow involvement, and CR/Cu or PR after first-line induction therapy. After induction, patients were randomized to either Zev (250 mg/m² rituximab on day –7 and day 7) or to MCP-chemotherapy (mitoxantrone 2, chlorambucil 3x3 mg/m² d1), who will be provided.

**Results:** Median follow-up of 50 months we can demonstrate significant improvement of time to treatment failure and OS with MCP compared to Zev (RE: 0.455 95% CI: 0.337, 0.605 <0.0001).

**Conclusions:** Of first remission with Zev in patients with advanced FL resulted in high PR to CR conversion rates regardless of type of first-line induction treatment, prolonged PFS by 2 years overall, and extended PFS in all FLIPI subgroups.

**332 LONG-TERM FOLLOW-UP OF PATIENTS TREATED WITH TOSITUMOMAB AND 131I TOSITUMOMAB (BEXXAR®)**

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**Introduction:** Between March 1996 and July 2001, 100 patients (pts) with recurrent refractory B-cell NHL received BEXXAR® according to standard methodology, either in consecutive phase II trials, or on a compassionate basis. Long-term follow-up data are reported.

**Patients:** At the time of therapy, the median age was 52 years (yrs, range 27-90); 42 pts had bone marrow involvement (all <=25%). Histology: follicular lymphoma (FL) 88, b-lineage-proven transformation to diffuse large B-cell lymphoma having occurred in 20, mantle cell lymphoma 5, lymphoplasmacytoid lymphoma 3 and small lymphocytic lymphoma 2. Treatment was given a median of 3 yrs from diagnosis (1 mo-20½ yrs) and after a median of 2 prior therapies (1-15), including high-dose therapy in 11 (receiving an attenuated whole body radiation dose of 45 cGy). Twenty-five pts had failed to respond to their last therapy and 10 were refractory to rituximab. All pts are included in the analysis (4 received only the dosimetric dose; 3 disease progression, 1 developed human anti-mouse antibodies).

**Results:** The overall response rate was 62% (33% achieving CR/Cu). Median duration of response was 1.4 yrs (95% CI: 0.8-5), with a plateau observed from 3 yrs at 34%. Median progression-free survival was 7 mos (95% CI: 6 mo-yr); median overall survival (OS) 3 yrs from therapy (95% CI: 2.2-5.8) and 6 yrs (95% CI: 5 – not reached [NR]) for responders. Those achieving CR/Cu(1) had a significantly better OS (median not reached [NR], 65% at 5 yrs), than those in PR (median 2 yrs [95% CI: 1.9-5.4], p<0.010). Pts treated at 1st or 2nd recurrence had a superior OS (median 5 yrs [95% CI: 3yrs-NR]) than those treated later (median 2yrs [95% CI: 7mos-4yr]). Transformation was associated with a worse prognosis than persistent FL (median OS 10 mos [95% CI: 2mos-24yrs] compared to 3 yrs [95% CI: 1.2-2.9] p=0.002). One case of tDMS was reported at 4.5 yrs.

**Conclusion:** These results, with a minimum follow-up of 6 yrs confirm the durability of CR/Cu in pts treated at recurrence of FL with Bexxar.
333  ELDERLY PATIENTS WITH UNTREATED ADVANCED STAGE FOLLICULAR LYMPHOMA (FL) TREATED WITH BRIEF CHEMOIMMUNOTHERAPY RITUXIMAB FNDC +/- RITUXIMAB MAINTENANCE: PRELIMINARY ANALYSIS OF A PROSPECTIVE RANDOMIZED STUDY

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1Hematology, Istituto Giovanni Battista Hospital and University, Turin, Italy, On Behalf of Intergroupo Italiano Linfohi, 2Roche Morzas Italy

Introduction: We examined efficacy and safety of a brief chemo-immunotherapy RENDD followed by randomization between R maintenance or observation in a study specifically devised for elderly.

Material and methods: From January 2004 to December 2007, 235 pts (age 60-75) with untreated advanced stage FL were enrolled and treated with: 4 courses of RENDD (Fludarabine, Mitoxantone, Dexamethasone) followed by 4 weekly R consolidation; CR+R+PR pts were randomized between R maintenance (375 mg/m² every 4 months for 4 doses) or observation. PCR analysis for IgH/Bcl-2 rearrangement was performed in bone marrow (BM) at diagnosis, after RENDD, R consolidation and during maintenance/observation. Preliminary analysis was done after the first 80 randomized pts. This analysis included 95 pts recruited within this time frame.

Results: Median age 65 (60-75); stage III/IV 16/70%; FLIPI low (L) 10%, intermediate (I) 30%, high (H) 60%. PCR analysis was done in 91 pts at diagnosis: 56% were Bcl-2 intermediate (I), 30% high (H), 60% PCR negativity associated with CR(46 pts Bcl2+/−RITUXIMAB with CR, 80 pts with R-PCR negativity associated with CR). 4 pts were unable to be randomized.

Conclusions: A brief chemo-immunotherapy RENDD + R consolidation is safe and effective with a high CR rate and PCR negativity in elderly pts with untreated FL with FR PLUS H. The results of this ongoing trial will provide insights on the role of R maintenance after R-chemotherapy.

335  RANDOMIZED COMPARISON OF CLADRIBINE SINGLE (CDA) OR IN COMBINATION WITH CYCLOPHOSPHAMIDE (CCDA), AND COP IN PREVIOUSLY UNTREATED LOW GRADE B-CELL NON-HODGKIN LYMPHOMA PATIENTS - FINAL REPORT

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On Behalf of the Polish Lymphoma Research Group

Introduction: To comparatively assess first-line treatment with cladribine (CDA); CDA and cyclophosphamide (CCDA) or cyclophosphamide, vincristine and prednisone (COP), previously untreated patients (pts) with low grade non-Hodgkin lymphomas (LGHL) were randomly allocated to receive monoc cyclics of CDA, CCDA or COP.

Methods: End points were treatment response, progression-free survival (PFS), overall survival (OS), and toxicity. From 1st of July 2000 to 30th of June 2005, 197 pts were randomized in 12 centers. Finally, 162 pts who completed scheduled chemotherapy and for whom all clinical data were available were analyzed for end points of the study.

Results: Compared to COP, CDA or CCDA induced higher probability of overall response (odds ratio [OR]=4.0, 95% confidence interval [CI] 1.7-9.3, p=0.002, and OR=8.5 95%CI 3.2-22.7, p<0.001, respectively), complete remission (OR=5.8, 95%CI 1.8-18.5, p=0.003, and OR=14.5, 95% CI 3.4-60.7, p<0.001, respectively). PFS (log-rank test, p<0.001) but not OS. After incorporating the International Prognostic Index (IPI) in multivariate analysis, treatment with CDA containing regimens remained an independent prognostic factor (log-ratio [HR] 0.23, p=0.002).

Conclusions: For pts with LGHL, first-line CDA or CCDA regimens both provided similar treatment responses and acceptable toxicity, and better response rates than COP.

336  OUTCOME OF RELAPSED/REFRACTORY FOLLICULAR LYMPHOMA PATIENTS IN THE GELA/GOELAMS FL 2000 STUDY: INTEREST OF AUTOLLOGOUS STEM CELL TRANSPLANTATION IN OS

S. Le Gouill1, S. De Gubert2, C. Vollet3, M. Fournier4, F. Morschhauser5, C. Boyer1, P. Brice1, C. Hacquin3, S. Fouscard2, G. Salle9

1Hematology, Medical University, Nantes, France, 2On Behalf of GOELAMS and GELA, 3Hematology, CHU, Rennes, France, 4Statistical dpt, CHU, Nantes, France, 5Hematology, CHU, Liége, France, 6Hematology, CHU, Lyon, France, 7Hematology, CHU, Lille, France, 8Hematology, University, Louvain, Belgium, 9Hematology, Saint-Louis, Paris, France, 10Hematology, H. Mondor, Creteil, France, 11Hematology, CHU, Angers, France, 12Hematology, CHU, Lyon, France

In the FL2000 study, untreated high tumor burden FL pts (n=359) were randomly assigned to receive 12xCHVP (cytophorosamide, adriamycin, etoposide and prednisolone) plus interferon-α2a (18 months) (Arm A) vs 6xCHVP with 6 x rituximab and interferon (18 months) (Arm B). The final analysis (ASH 2007) confirmed the superiority of Arm B. We analysed the outcome of 178 relapsed/refractory pts: 63 pts progressed on therapy (refractory), 115 progressed or relapsed after completing their first line treatment (off therapy). 105 patients were initially randomized in Arm A. Median time from diagnosis to progression for responding pts (n=115) was 2 years (range from 1.4 to 5.7 years). Second line treatment (n=155) was left at investigateur’s discretion: cytarabine-based in 24 %, alkylating-based in 22%, anthracycline-based in 21%, fludarabine-based in 16% or other in 17%. Seventy pts did not received anti-CD20 containing regimen. Forty two pts underwent ASCT. After salvage therapy, 81 pts reached CR/CRU and 23 reached PR (data missing in 20%). After a median FU (from time of first progression) of 30.5 months, the 3- and 5-year OS after first relapse estimates were 50% and 26%, respectively. The 3- and 5-year OS after first relapse estimates were 71% and 52%, respectively. According to the initial randomization arm, no difference in OS and PFS was observed. The 3-year OS was better for patients that progressed of CR-4,4% vs 21% (p=0.01) and 30% (p=0.03) for patients that received ASCT at this time had a significantly improved 3-year OS: 92% vs 58% (p<0.0001) (analysis restricted to patients younger than 70 years). Similar results were observed considering PFS. This preliminary analysis demonstrates that ASCT improves OS and PFS of relapsed/refractory high risk FL pts.

337  SECONDARY MALIGNANCIES IMPAIRED SURVIVAL AFTER 1ST LINE PURGED AUTOLLOGOUS TRANSPANTATION FOR ADVANCED FOLLICULAR LYMPHOMA NINE YEARS FOLLOW-UP OF A RANDOMIZED GOELAMS TRAIL

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From January 2004 to December 2007, 235 pts (age 60-75) with untreated advanced stage FL were enrolled and treated with: 4 courses of RENDD (Fludarabine, Mitoxantone, Dexamethasone) followed by 4 weekly R consolidation; CR+R+PR pts were randomized between R maintenance (375 mg/m² every 4 months for 4 doses) or observation. PCR analysis for IgH/Bcl-2 rearrangement was performed on bone marrow (BM) at diagnosis, after RENDD, R consolidation and during maintenance/observation. Preliminary analysis was done after the first 80 randomized pts. This analysis included 95 pts recruited within this time frame.

Results: Median age 65 (60-75); stage III/IV 16/70%; FLIPI low (L) 10%, intermediate (I) 30%, high (H) 60%. PCR analysis was done in 91 pts at diagnosis: 56% were Bcl-2 intermediate (I), 30% high (H), 60% PCR negativity associated with CR(46 pts Bcl2+/−RITUXIMAB with CR, 80 pts with R-PCR negativity associated with CR). 4 pts were unable to be randomized.

Conclusions: A brief chemo-immunotherapy RENDD + R consolidation is safe and effective with a high CR rate and PCR negativity in elderly pts with untreated FL with FR PLUS H. The results of this ongoing trial will provide insights on the role of R maintenance after R-chemotherapy.
Background: First results of the GOELAMS study, comparing autologous stem cell transplantation (ASCT) and standard chemotherapy, showed an increased progression-free survival (PFS) in the high-dose chemotherapy arm, but no advantage on OS, whereas the ECOG score, the number of affected nodal areas and the time between diagnosis and ASCT independently affected OS, whereas the ECOG score, the number of affected nodal areas and the time between diagnosis and ASCT independently affected OS, whereas the ECOG score, the number of affected nodal areas and the time between diagnosis and ASCT independently affected OS, whereas the ECOG score, the number of affected nodal areas and the time between diagnosis and ASCT independently affected OS, whereas the ECOG score, the number of affected nodal areas and the time between diagnosis and ASCT independently affected OS.

Conclusions: An excess of secondary malignancies (12 vs. 1) was observed in the ASCT group. An excess of secondary malignancies (12 vs. 1) was observed in the ASCT group. An excess of secondary malignancies (12 vs. 1) was observed in the ASCT group. An excess of secondary malignancies (12 vs. 1) was observed in the ASCT group.

Results: 166/172 patients were evaluable. Compared to chemotherapy, the 9-year PFS is higher after ASCT (64% vs. 39%; p=0.004). No significant difference in the PFS curves between ASCT and chemotherapy was observed only in the low FLIPI 1 group. An excess of secondary malignancies (12 vs. 1) was observed in the ASCT group compared to the chemotherapy group.

Conclusion: On the observation of a plateau curve for PFS suggests that a subgroup of patients, probably those with the lowest tumor burden might be cured by ASCT. Despite these results OS was not modified in the ASCT group due to the increase in secondary malignancies. These data discourage the use of purged ASCT associated with total body irradiation.

338 VERY LONG-TERM FOLLOW-UP OF AUTOLOGOUS STEM CELL TRANSPLANTATION IN FOLLICULAR LYMPHOMA: A RETROSPECTIVE SINGLE-INSTITUTION EXPERIENCE

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The natural history of follicular lymphoma (FL) is a succession of remissions and relapses. Autologous stem cell transplantation (ASCT) is one therapeutic option. To conclude about the interest of ASCT in this slow progressive disease, a long term follow-up is necessary. However, few clinical studies address this issue. Our study reports the long-term outcome of 80 patients suffering from FL who underwent ASCT in our institution.

Patients characteristics: Between 1989 and 2004, eighty patients with FL underwent ASCT. Forty-five patients were males, median age at diagnosis and the moment of ASCT was 45-71 years (27-62 years) and 48.08 years (28-64 years), respectively. Average time between diagnosis and ASCT was 53 months. ASCT was performed upfront for 37 patients, at first relapse for 35 patients and at a subsequent relapse for the others. Response prior to ASCT was obtained using a CHOP-like regime for 48 patients (60%) or an aracytine based regimen for 22 patients (27.5%). Sixteen patients received Rituximab. The conditioning regimen was either TBI/cyclophosphamide (63 patients) or BEAM (17 patients).

Results: Response after ASCT was CR/Crlu in 71 cases (89.8%), VGPR in 4 cases, refractory diseases in 3 cases (data missing in 2 cases). No patient died during the ASCT procedure. Thirty-four patients experienced relapse after ASCT including 8 patients with histologic transformation. Thirty-eight patients required other treatments following ASCT. 19 of them received a Rituximab-based therapy. Twelve patients died (including 7 histologic transformations and 3 AML/MDS). The median follow-up is 7.75 years. The median EFS was reached at 8.9 years. At three, five and seven years EFS was 82.8%, 70.3% and 61.7% and OS was 96%, 91.4% and 85.9% respectively. The median OS has not been reached.

Conclusion: Our study demonstrates that ASCT is a procedure which can prolonge EFS and OS in FL. A plateau appears on the OS Kaplan-Meier curve at 32% at 108 months, and on the molecular remission duration curve at 37% at 80 months. A plateau on the OS curve seemed to emerge at 32% at 108 months, and on the molecular remission duration curve at 37% at 80 months. A plateau on the OS curve seemed to emerge at 32% at 108 months, and on the molecular remission duration curve at 37% at 80 months. A plateau on the OS curve seemed to emerge at 32% at 108 months, and on the molecular remission duration curve at 37% at 80 months.

339 EFFICACY OF HIGH-DOSE SEQUENTIAL CHEMOTHERAPY AND AUTOGRAPH FOR TRANSFORMED NON HODGKIN'S B CELL LYMPHOMA: RESULTS OF A RETROSPECTIVE ANALYSIS FROM GITIL (GRUPPO ITALIANO TERAPIE INNOVATIVE NEI LINFOMI)

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Background: We analyzed a consecutive series of 66 pts with a confirmed diagnosis of transformed follicular lymphoma (TFL) registered at the GITIL centers from 1988 to 2004 and treated with high-dose sequential (HDS) chemotherapy and autograft.

Methods: Biopsy-proven histological transformation (HT) in diffuse large B cell lymphoma was observed at diagnosis (n=24; 36%) or at relapse after a treatment for FL (n=42; 64%). Patient characteristics: median age 61 yrs (range 36–66), stage I-II/III-IV 8/54, IPI score 0-I/II/III/IV 8/54, IPI score 0-I/II/III/IV 8/54, IPI score 0-I/II/III/IV 8/54. HDS regimen included i. 3 APO or 3 DHAP courses; ii. sequential administration of h-CTX, h-Ara-C, h-Etoposide, with peripheral blood stem cell (PBSC) harvesting following h-CTX and hd-Ara-C; iii. myeloablative regimen with hd-Melphalan/L-PAM 160-280 mg/m2 or NEAM (n=28 pts who could not receive additional anthracyclines), or BEAM (n=3); iv. PBSC autograft; v. consolidation radiotherapy on bulky disease. From January 1999, h-CTX and h-Ara-C has been supplemented with Rituximab (R-HDS; n=34).

Results: Overall 59 pts achieved a CR (89%), 1 patient responded partially and underwent allogeneic BMT, 6 pts died for PD while on therapy (9%). With a median follow-up of 67 mos (range 23-170), 42 pts are alive (63%), 24 pts relapsed and died for PD (n=23) or toxicity (n=1). Five-year event free survival (EFS) and overall survival (OS) are 53% and 66%, respectively. No significant differences in OS and EFS were observed between pts with HT at diagnosis or at relapse, with IPI O-1 vs IPI >2. Of note, pts treated with R-HDS showed an improved clinical outcome (OS: 76% vs 50%, EFS 68 vs 37%, respectively) with a large difference that did not reach statistical significance because of the limited number of pts.

Conclusion: Our data strongly suggest that HDS regimen, in particular when supplemented with rituximab (R-HDS) is a very effective regimen in transformed B cell lymphoma.

340 LONG TERM MOLECULAR REMISSIONS AFTER AUTOLOGOUS HEMATOPOIETIC STEM CELL TRANSPLANTATION IN FOLLICULAR LYMPHOMA

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Autologous stem cell transplantation (ASCT) has been shown to be an effective treatment for first-line and relapsed follicular lymphomas (FL). The aim of this retrospective study was to determine the clinical and molecular outcome of patients with FL who received ASCT during a 12-year period. All patients, who underwent ASCT for first-line or relapsed FL between January 1992 and December 2004, were studied. Seventy-one patients, with a median age of 45 years and a median follow-up of 108 months, were analysed. Most of them belonged to the subtype grade 1 (57%), had a high tumor burden (50%), were treated in first-line (52%) and received an unpurged graft (58%). After an anthracycline-based induction regimen, they received BCNU, Etoposide, Aracynite, Melphalan (BEAM in 58%) or Cyclophosphamide and total body irradiation (42%) as conditioning for the ASCT. Thirty-eight patients were alive, 24 without progression between 4 and 12 years; 31 patients were dead, 7 without progression. A total of 38 patients (55%) developed recurrent lymphoma. The progression-free (PFS) and the overall survival (OS) at 10 years were 33% and 47%, respectively and the molecular PFS at 10 years was 37%. There was an apparent plateau on the remission duration curve at 32% at 72 months and on the molecular remission duration curve at 37% at 80 months. A plateau on the OS curve seemed to emerge at 41% from the tenth year. Three patients developed a secondary neoplasm and two a secondary myelodysplastic syndrome. The 10-year non-relapse mortality (NRM) was 20%. This long follow-up study showed a plateau on the PFS and on the molecular PFS curves, suggesting that a selected group of patients might be cured by ASCT.

341 MYELOABLATIVE RADIOCHEMOTHERAPY FOLLOWED BY AUTOLOGOUS STEM CELL TRANSPLANTATION IN FOLLICULAR LYMPHOMA: RESULTS OF A RANDOMIZED TRIAL OF THE GERMAN LOW-GRADE LYMPHOMA STUDY GROUP

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Background: Myeloablative radiochemotherapy followed by autologous stem cell transplantation (ASCT) significantly prolongs response duration (RD) in advanced stage follicular lymphoma patients in first remission after conventional chemotherapy (Lenz et al. Blood 2004, Deconinck et al. Blood 2005). We now asked whether dose
The RIT-Network (RIT-N) is a web-based, international registry that collects real-time and longitudinal data of RIT-treated patients. The registry is open to patients with lymphoma lesions before and after RIT. Together with the clinical data documented in the conventional indices – possibly related to individual lesions – influence the outcome after RIT.

Introduction/background: Although prognostic factors (PF) for conventional lymphoma therapy are known and used in clinical and scientific practice, the PF for radioimmunotherapy (RIT) have not been defined until now. As the mechanism of action of RIT differs significantly from that of chemotherapy, immunotherapy or percutaneous radiotherapy, it may well be that other factors than those comprised by the conventional indices – possibly related to individual lesions – influence the outcome after RIT.

Material and methods: MERIT as an addendum to the International Registry of Radioimmunotherapy (IRIR) includes the documentation of imaging findings in this registry along with an online archive for the respective FDG-PET and CT-image files. Based on these data, the MERIT study group centrally performs an evaluation of lymphoma lesions before and after RIT. Together with the clinical data documented in the IRIR, the aim of the MERIT study is to identify patient and lesion-specific prognostic factors for the RIT of follicular NHL. The MERIT study includes patients with follicular lymphoma (FL) and lesions measurable by imaging who receive RIT alone.

Results: CT and FDG-PET image data of the first patients with FL were already uploaded into an anonymized state and coregistered. Preliminary, twenty-five measurable lymphoma lesions were evaluated. Four months (mean) after RIT, 14/25 lesions had a metabolic remission in FDG-PET, 15/25 lesions a remission in size. In lesions >50x30 mm before RIT, no metabolic CR was observed. Of all 25 patients, responding and progressing lesions were seen simultaneously.

Conclusion: The web-based documentation and evaluation of FDG-PET and CT image data is planned to be extended to all RIT centers. The high rate of patients with responding and progressing lesion seen simultaneously will allow to evaluate not only patient specific but also lesion specific prognostic factors of RIT.
grade 2-4 aGVHD occurred in 8 (25%), limited cGVHD in 7 (22%) and extensive cGVHD in 14 (44%) pts. Non-relapse mortality (NRM) at 100 days was 0% and 6%, and at any time was 0% and 26% for ASCT and Allo/SynSCT, respectively. At 4yr median follow-up, projected 5yr outcomes (logrank p values) of ASCT vs Allo/SynSCT for relapse rate were 51% vs 32% (p=0.13), EFS 47% vs 51% (p=0.99), and overall survival (OS) 65% vs 59% (p=0.10), while for relapsed FL only (n=41) EFS was 49% vs 51% (p=0.94) and OS 86% vs 59% (p=0.038), respectively.

Conclusion: These data suggest RICE in-vivo purges autografts but mobilizes blood stem cells only moderately well. Using RICE-FluBu, ASCT and AlloSCT result in similar EFS and OS for relapsed/refractory indolent NHL.