

layed, and median survival is less than 12 months. We observed 3 PCL over 458 aggressive lymphomas newly diagnosed from 2002 to 2014 (0.6%). Histology was DLBCL in all PCL pts. Two pts were male, one pt was 44 while two pts were older than 65. None of the pts had a previous history of cardiac disease and HIV was negative in all cases. Diagnosis was performed by right heart mass biopsy in 2/3 pts and by mediastinal lymphnode biopsy in the remaining pt. Cardiac biopsy was performed after sternotomy and after transjugular catheter in one case each. Clinical presentation included dyspnea and precordial pain in 2 pts, palpitations and cough in 1 pt, and 2 pts had B symptoms. Staging at baseline and at the end of treatment consisted in CT, PET, Cardiac Magnetic Resonance Imaging (MRI) and trans-thoracic echocardiography (TTE) in all pts. Two pts had mediastinal lymphnodes in addition to heart localization, which involved right chambers in all cases. All pts received pre-treatment with steroid (prednisone 1 mg/kg/day from day-7) and vincristine (1 mg ev fixed dose day-7), followed by 6 cycles of COMP (Myocet® not pegylated Lyposomal Doxorubicin) and Rituximab ev. No acute cardiac event occurred during treatment. At final restaging all pts obtained Complete Remission (CR) PET negative and no evidence of disease at cardiac MRI. With a median follow-up of 16 months, two pts are alive and in continue CR, while the youngest pt experienced an early extra-cardiac relapse, underwent salvage therapy with R-DHAP and is now receiving Autologous Transplantation in second CR. Asymptomatic late cardiac toxicity developed in 2 pts during post-remission surveillance: one pt started low dose  $\beta$ -blocker due to biventricular hypokinesia, while a 70 years old pt started ACE-inhibitors due to arrhythmia and troponin increased blood levels with findings at TTE of cardiac remodeling. Our data suggest that PCL outcome has improved in the modern era, thanks to better diagnostic tools, which allow earlier diagnosis, and more effective treatment, including Rituximab and not pegylated Lyposomal Doxorubicin. Steroids and vincristine pre-treatment allowed to deliver full dose chemotherapy without acute cardiac morbidity, and should be considered in the management of this rare entity.

#### P227

##### EXTRANODAL MARGINAL ZONE NON HODGKIN'S LYMPHOMA OF THE LUNG: OUR EXPERIENCE WITH RITUXIMAB AND CHLORAMBUCIL-CONTAINING REGIMENS

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*Purpose:* Bronchial-associated lymphoid tissue (BALT) lymphoma is a rare subtype of low grade marginal zone B-cell lymphoma representing 10% of all MALT lymphomas. The aim of this study was to review data of patients with BALT lymphoma treated in our Institution. *Patients and Methods:* An observational retrospective study was performed on clinical data from all patients with histologically confirmed diagnosis of BALT lymphoma. We focus our attention on all the patients treated with Rituximab and Chlorambucil according to this scheme: rituximab 375 mg/sqm weekly for 4 doses, then monthly for 4 infusions in combination with chlorambucil at the dosage of 0,1 mg/Kg/die for 45 days, then on days 1 to 15 monthly for 4 months. *Results:* From January 2000 to February 2013, 16 patients were diagnosed and treated in our Institution, 14 of them uniformly treated with the scheme RC. The median age at diagnosis was 72 years (range 56-85). The diagnosis of BALT in 1 patients was associated with Sjogren Syndrome, in 1 patients with a positive HBV. Bone marrow biopsy was negative in 10 patients, positive in 1 and not performed in 3 patients. Stage was IA in 9 patients (64%), IB in 1, IIA in 1 patients and IIB in 1, IVA and IVB in 2 patients respectively. At the end of treatment 11 patients (79%) achieved a complete remission and 3 (21%) a partial remission with an overall response rate of 100%. With a median observation period of 52 months (range 1-133) the overall survival was 79%. The 3 patients who obtained a partial remission died, 1 for disease progression (18 months from the initiation of therapy), and 2 for causes not related to lymphoma (respectively 22 months and 1 months from the date of diagnosis). No relevant toxicities were registered, in particular no pulmonary infection or other type of infections were reported. *Conclusions:* After a long follow-up our results support the combination of Rituximab and Chlorambucil as first-line therapy of BALT lymphomas as low toxic, feasible and effective treatment.

#### P228

##### RITUXIMAB WITH OR WITHOUT CHLORAMBUCIL FOR THE TREATMENT OF EXTRANODAL MARGINAL ZONE B-CELL LYMPHOMA: RESULTS OF A RETROSPECTIVE MONOCENTRIC STUDY

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*Purpose:* Apart from localized gastric disease, there is no consensus on standard initial treatment of mucosa-associated lymphoid tissue lymphoma. This study was launched to evaluate the use of Rituximab (R) alone or plus Chlorambucil (RC) in patients not previously given systemic anticancer therapy. *Patients and Methods:* All patients with histologically confirmed diagnosis of MALT lymphoma were selected from our data base. Only patients treated with R or RC were analyzed and evaluated. The scheme RC was the follow: rituximab 375 mg/sqm weekly for 4 doses, then monthly for 4 infusions alone or in combination with chlorambucil at the dosage of 0,1 mg/Kg/die for 45 days, then on days 1 to 15 monthly for 4 months. *Results:* From January 2000 to February 2013, 136 patients had a diagnosis of MALT lymphoma and treated in our Institution, 76 of them uniformly treated with R or RC. These cohort of patients were considered for the study. The median age at diagnosis was 68 years (range 32-85). In 20 patients the disease was localized in conjunctiva; 17 in the stomach; 14 in the lung; 13 in salivary glands; 3 intestine; 2 respectively in lacrimal gland, liver, skin; 1 in breast, cheek and tongue. Stage was IA in 63 patients (83%), IB in 1, IIA in 5 patients and IIB in 1, IIIA in 1 patient, IVA in 4 patients and IVB in 1. Bone marrow biopsy was negative in 59 patients, positive in 5 and not performed in 12 patients. The diagnosis of MALT in 4 patients was associated with Sjogren Syndrome, in 4 patients with a positive HCV and in 1 with scleroderma. According to treatment, 61 patients were treated with Rituximab plus Chlorambucil; 15 were treated with Rituximab alone. At the end of treatment 68 patients (89%) obtained a complete remission and 7 (11%) a partial remission with an overall response rate of 100%. With a median observation period of 65 months (range 1-158) the overall survival was 88%. 9 patients died, 6 for disease progression (3 after a relapse) and 3 for causes not related to lymphoma. 12 patients (16%) relapsed, 8 of these patients were retreated with Rituximab and obtained a new complete remission, 1 is still on watch and wait regimen. Both treatments were well tolerated without unexpected toxicities. With a long observation period no second neoplasms were registered. *Conclusions:* After a long follow-up the combination of Rituximab and Chlorambucil or Rituximab alone proved to be low toxic, feasible and effective therapy for MALT lymphomas.

#### P229

##### PSYCHOLOGICAL DISTRESS AND ORAL CHEMOTHERAPY: A PILOT STUDY

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Oral chemotherapies (OC) have recently been introduced as support or replacement of the classic intravenous therapies, especially in elderly patients with lymphoma, in which relapses are frequent and intravenous chemotherapies give more difficulties. Even if OC are well-tolerated and easy to administer, given the commitment of the management of the therapy to the patients could lead to an increase in the psychological distress. In order to better prepare the patients to self-management the OC, at the Oral Chemotherapy Clinic of the "AOU Città della Salute e della Scienza" Hospital of Turin an hospital pharmacist assist the hematologist and the psycho-oncologist and provide detailed information regarding the treatment and the possible side effects. This longitudinal study aimed to assess anxiety, depression and the general well-being in patients with lymphoma, at the beginning (T0) and after three cycles (T1) of treatment with OC. It also investigated the levels of worry of the patients about the treatment management and the levels of satisfaction related to the presence of the pharmacist. Twenty-five patients were recruited and as-

sessed at T0 and T1 with the Functional Assessment of Cancer Therapy Scale-General (FACT-G) for quality of life and the Hospital Anxiety and Depression Scale (HADS) for psychological distress. In addition, at T1, seven Visual Analog Scales (VAS) were used to measure the level of worry about the treatment management and to judge the quality of the clinic. Patients had a mean (SD) age of 80.6 (5.4) years. 68% (17/25) of them had a low grade whereas 32% (8/25) had a high grade lymphoma. The FACT-G showed a mean score of 67.0 (12.0) at T0 and of 63.5 (15.6) at T1, suggesting that, even if the patients' quality of life is partially compromised by the cancer, the OC do not further worsen it. The HADS revealed a low presence of psychological distress, both at T0 (11.8 (6.1)) and at T1 (11.8 (8.2)). These scores are, in fact, below the cut-off of 15, generally used to identify the presence of psychological distress in cancer patients. The VAS scores showed a high satisfaction regarding the quality of the services and, in particular, regarding the presence of the pharmacist and the detailed information provided. In conclusion, although preliminary, our data suggested that OC seems not to negatively impact patients' quality of life and that a multidisciplinary approach contribute to prevent an increased in the psychological distress.

### P230

#### THE TREATMENT OF PRIMARY MEDIASTINAL B CELL LYMPHOMA IN THE ERA OF DA-EPOCH-R

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**Background:** Primary mediastinal large B-cell lymphoma (PMBCL) is a B-cell lymphoma variant that arises from thymic cell. It occurs most frequently in young females and it is characterized by mediastinal bulky mass. At the moment the standard treatment is considered immunochemotherapy in association with mediastinal radiotherapy. **Purpose:** To compare standard treatment with regimens as R-CHOP14 or R-MACOP-B plus radiation therapy and DA-EPOCH-R protocol recently defined as the most effective treatment in large series of aggressive lymphoma. Moreover we want to see, in our monocentric casistic, if R-CHOP14 plus radiotherapy is equivalent to R-MACOP-B plus radiotherapy. **Patients and Methods:** We have retrospectively analysed all patients with PMBCL diagnosis between May 1999 and April 2014 treated in our Hematology Unit. Twenty previously untreated patients with PMBCL were selected. They were treated with a combination of immunochemotherapy regimen (R-MACOP-B or R-CHOP14) with mediastinal radiation therapy. **Results:** The patients had a median age of 35 (range, 21 to 53); 70% were women. Ten were treated with R-MACOP-B (arm A) and radiotherapy was performed in all but one patient due to mycosis pulmonary infection, ten patients were treated with R-CHOP14 (arm B) and radiotherapy. In arm A 9/10 patients obtained a complete remission and in arm B 10/10 patients obtained a complete remission after induction therapy. With a median follow-up of 39 months (range, 1 to 134) one patient die and the overall survival rate was 95%. Nineteen patients maintained the complete remission and we did not observe any relapse. No secondary neoplasms are reported in our cohort of patients. **Conclusions:** This retrospective study showed the equivalence of R-CHOP14/R-MACOP-B regimens versus DA-EPOCH-R in first line PMBCL treatment. Each regimen has, obviously, possible side effects, both in the short and long term in particular those associated to radiation therapy. To date, however, we have to consider new radiation techniques less harmful to the patient. Moreover we must consider the crucial role of PET in determining whether the RT is needed or not and we are waiting for results of prospective randomized study. The internal evaluation of the two schemes confirms that R-CHOP14 is absolutely comparable with R-MACOP-B in term of response to therapy, progression free survival and overall survival.

### P231

#### ARE THE FOLLICULAR LYMPHOMAS CURABLE DISEASES? RETROSPECTIVE STUDY ON 146 PATIENTS WITH AT LEAST 10 YEARS OF OBSERVATION

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**Purpose:** Follicular lymphomas are usually defined as incurable disease. This study was launched to evaluate how many pts don't relapse or don't experience a new chemotherapy treatment. We aim to identify which clinical characteristics or therapeutical approaches are associated with this cohort of favourable patients. **Patients and Methods:** All pts with diagnosis of FL grade I-II or IIIa were selected starting from January 2000 till December 2004 in such a way to have at least 10 years of observation for alive pts. We considered pts obtaining at least a PR and we divided them in 2 cohorts, cohort 1 with pts relapsed or progressed and cohort 2 with pts never relapsed or progressed. **Results:** From January 2000 to December 2004, 146 patients were diagnosed and treated in our Institution. 13 pts were excluded from the analysis, 8 because of lost to the follow-up and 5 did not obtained at least a PR. Finally 133 pts were selected for the study. The median age at diagnosis was 61 years. Stage I-II in 47 patients, III-IV in 86. Bone marrow biopsy was positive in 87 pts, FLIPI 0-1 in 35, FLIPI 2-3 in 83 and FLIPI 4 in 15 patients. 96 patients were treated with antracycline containing regimens, 24 with fludarabine containing regimens and 13 were observed or treated with RT. Rituximab was used in 92 patients, as sequential treatment in 70 or chemotherapy combined in 22; 41 pts did not use rituximab. We analysed cohort 1 (85 pts) and cohort 2 (48 pts) and the statistically significant differences between the them were: elderly pts (p 0.05), symptomatic pts (p 0.05), FLIPI and FLIPI2 high score (p 0.005), lack of CR (p 0.0000) all observed in cohort 1. The OS with a median period of observation of 115 months was 71%, considering the two groups the OS in cohort 1 was 62% with a median of 142 months and it was 94% in cohort 2 with median not reached. In univariate analysis normal value of 2 microglobulin (p 0.05) and the use of rituximab (p 0.01) were associated with a better OS; in multivariate analysis treatment with rituximab mantained a statistically significance. **Conclusions:** This retrospective monocentric study confirms that about 1/3 of FL pts could be considered cured particularly if rituximab was used. At present all pts with FL are treated with combined immuno-chemotherapy, moreover after induction therapy patients are started on maintenance. We can therefore hope for the future in an improvement of survival results.

### P232

#### EFFICACY AND SAFETY OF THE GERMAN SHORT INTENSIVE RITUXIMAB-CHEMOTHERAPY PROGRAM IN BURKITT LYMPHOMA AND LEUKEMIA, AND HIGHLY AGGRESSIVE DLBCL: A SINGLE CENTER EXPERIENCE

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**Introduction:** The short German intensive rituximab-chemotherapy regimen (B-NHL 2002) is highly effective in the treatment of Burkitt lymphoma and leukemia (BL-L). Diffuse large B-cell lymphoma (DLBCL) is a clinically and molecularly heterogeneous disease with disparate outcomes. A subgroup of DLBCL is often characterized by more aggressive clinical course, and one-third of the patients present with disease that is either refractory to initial standard therapy, such as R-CHOP regimen, or relapses. **Methods:** Adults and consecutive patients with newly diagnosed Burkitt lymphoma and leukemia, and Highly Aggressive DLBCL, were treated with the GMALL B-ALL/NHL2002 protocol. We considered DLBCL Highly Aggressive when characterized by high proliferative index Ki67 >90% (B-cell lymphoma unclassified with features intermediate between diffuse large B-cell lymphoma and BL; ABC/non GC DLBCL; Double Hit Lymphoma; Richter Syndrome). Patients >55 years old received a reduced regimen. Rituximab was given before each cycle and twice as maintenance. We evaluated response and outcomes in all patients. **Results:** From February 2011 to March 2015 25 patients, 15 with BL-L and 10 with DLBCL (10) were treated with the GMALL protocol as first line therapy. Three patients were not included in the statistical analysis because their treatment was not yet completed (details on baseline characteristics of patients are reported in the Table 1). After a median follow up of 9 months (5- 46), Complete Remission (CR) was achieved in 81% of the patients (18 patients); 3 patients had refractory or relapsed and shifted to further treatments. 18 Patients who achieved CR are still alive, and 17 patients are in CCR; only one patient with BL relapsed after 12 months as a Follicular Lymphoma. Major grade III/IV toxicity was hematological: 100% suffered from neutropenia in at least 1 of the performed courses, thrombocytopenia (86%), and anemia (70%). Treat-