**098  THE NUMBER OF PREVIOUS TREATMENT LINES HAS NO IMPACT ON THE OUTCOME AFTER HIGH-DOSE THERAPY WITH AUTOLOGOUS STEM CELL RESCUE WITH BEAM FOR RELAPSED FOLLICULAR LYMPHOMA**

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**Background:** The role of high-dose therapy with autologous stem cell rescue (HDT-ASCR) remains a major challenge in the management of patients (pts) with follicular lymphoma (FL), particularly in view of the undoubted clinical impact of rituximab and the advent of new therapeutic options such as reduced-intensity conditioning allotransplants. It was suggested that HDT-ASCR should be used not later than at 2nd response given the relatively high incidence of secondary myelodysplasia/acute myelogenous leukemia (sMDS/AML) after cyclophosphamide/total body irradiation (Cy-TBI) in heavily pretreated pts. However, it is not known if the number of previous therapy lines also influences prognosis in pts treated with BEAM for relapsed FL. This is currently of special relevance to decide the best timing for this therapy as it is pts who did not receive 1st line immunomunotherapy for FL that are presenting with recurrent disease.

**Patients:** From 1997 to 2008, 80 pts (41M/39F; median age: 51 yrs; range: 31-67), including 30 with transformed FL (tFL), received HDT-ASCR with BEAM for relapsed FL at our centre.

**Results:** The median time from diagnosis to HDT was 41 months (range: 4-165). The median number of previous treatment lines was 3, 63% of the pts having received 3+. Thirty-eight pts (49%) received rituximab before HDT (only in 1 case as part of the 1st line therapy, in 28 as part of the salvage therapy before BEAM and in 4 as part of the HDT). There was a trend for a higher use of rituximab before BEAM in pts with FL (56%) in comparison with those with tFL (33%, p=0.05). After a median follow-up of 76 months (range: 14-160), 2 pts developed sMDS/AML. Five-year overall survival (OS) was 71% and 5-year progression-free survival (PFS) 44%. There were no differences in PFS or OS according to the number of previous treatment lines or episodes of disease.

Likewise, histology at relapse did not impact on PFS or OS. Comparison with a historical control of pts treated with Cy-TBI revealed no significant differences in PFS or OS.

**Conclusions:** Deferring HDT with BEAM until 3rd response does not impair OS in pts with FL.

<table>
<thead>
<tr>
<th>3-y PFS</th>
<th>p-value</th>
<th>5-y OS</th>
<th>p-value</th>
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<tbody>
<tr>
<td>Histology</td>
<td>FL (50)</td>
<td>50%</td>
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<tr>
<td>IFL (30)</td>
<td>43%</td>
<td>43%</td>
<td>0.4</td>
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<td>Episodes</td>
<td>1-2 (58)</td>
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<td>&gt;=3 (22)</td>
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<td>0.4</td>
<td>74%</td>
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<td>Treatment</td>
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<tr>
<td>regimen</td>
<td>BEAM (84)</td>
<td>44%</td>
<td>0.01</td>
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**099  AUTOLOGOUS AND ALLOGENEIC STEM CELL TRANSPLANTATION FOR TRANSFORMED INDOLENT NON-HODGKIN LYMPHOMA: A REPORT OF THE CANADIAN BLOOD AND MARROW TRANSPLANT GROUP (CBMTG)**

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**Background:** The outcome of patients with indolent non-Hodgkin lymphoma who have experienced transformation to an aggressive histology is poor despite current chemotherapy. The objective of this study was to determine whether autologous (AUTO) or allogeneic (ALLO) stem cell transplantation improve outcomes for these patients in the rituximab era.

**Materials and Methods:** This is a multicenter, retrospective cohort study of patients with biopsy-proven indolent B-cell non-Hodgkin lymphoma and simultaneous or subsequent biopsy-proven aggressive histology transformation, who were treated over the last 15 years at a participating CBMTG institution. Individual patient and disease characteristics, treatment and transplantation details, as well as outcomes were collected from each center and combined for analysis. A separate control group composed of cases with transformed lymphoma treated with conventional chemotherapy plus rituximab only, but not AUTO or ALLO, was identified using the BCCA Lymphoid Cancer database.

**Results:** A total of 375 patients were identified: 66 (18%) were treated with AUTO, 204 (54%) with AUTO, and 105 (28%) with chemotherapy. Median age at transformation was 45 (range 25-72) for AUTO patients, 53 (24-72) for AUTO, and 64 (30-87) for controls (p<0.001). Over 95% ALLO were myeloablative. The majority received 1 or 2 salvage chemotherapy regimens, which included rituximab in 52% ALLO, 55% AUTO, and 50% control patients. Control vs. controls, patients eventually undergoing stem cell transplantation had improved 5-year post-transplantation PFS (ALLO 47%, AUTO 48%, control 38%, p=0.033) but 5-year OS was similar (ALLO 49%, AUTO 50%, control 54%, p=0.276). Outcomes were similar following AUTO and ALLO, with 5-year progression-free survival (PFS) 46% vs. 50% (p=0.136) and OS 46% vs. 48% (p=0.806).

**Conclusions:** This is the first large series to compare results of AUTO and ALLO and rituximab-based chemotherapy for TRL. In this retrospective comparison, SCT appears to improve PFS though not OS over conventional chemotherapy. TRM was significantly greater in ALLO patients although OS was not statistically different. The addition of rituximab to salvage chemotherapy improves PFS and OS for patients who undergo AUTO, but not ALLO. Relapse and transplant-related mortality remain significant problems in this patient population. Prospective trials will be required to demonstrate the optimal therapy for this aggressive NHL.
PFs were evaluated within the largest histological subgroups in our study (PTCL-NOS (n=42) and ALC, (n=40)). Among these 82 pts, age >50 years (p=0,03), IPI of >1 (p=0,006). Prognostic factors for T-cell lymphoma (PTL) of >1 (n=0,008), prior exposure to >3 chemotherapy lines (p=0,01) and refractory disease (p=0,01) were associated with a significantly worse OS. The same factors, with the exception of age, were associated with significantly worse PFs. We were not able to detect any difference in outcomes between ALK (−) and ALK (+) ALC. The 4 yr PFs of pts with the various histologies were PTCL-NOS=44%, ALC=38%, AILT=37%, NK TCL=67% and T-LBL=14%.

Conclusion: This is the largest single institution analysis to investigate the role of ASCT for TCL. Our review demonstrates that ASCT can produce long-term remissions in TCL patients when incorporated into an upfront strategy. Innovative strategies are instead needed for pts with relapsed disease.

101 LONG TERM DISEASE CONTROL AND OVERALL SURVIVAL AFTER EARLY DOSE INTENSIFICATION IN T-NHL DEPEND ON SPECIFIC ENTITIES

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In contrast to B-NHL, no standard therapy for T cell lymphoma exist so far. Nevertheless, CHOP-like therapies were used due to known effects in B cell lymphoma. In addition, the impact of dose intensification and first line high dose therapy/ASCT in subsequently treated patients with T-NHL. From 12/1986-07/2009 a total of 113 patients newly diagnosed with T-NHL were treated at the University Hospital Freiburg. The median age of the entire cohort was 56 years (range: 19-90) and the specific diagnoses included: PTCL-NOS (n=46), AIL (n=25), ALC, AIL AL (n=26), ALC, AL positive (n=7), and others (n=11). Initial chemotherapy included anthracycline based/CHOP-like regimens in most of the cases. If no complete remission could be achieved by CHOP-like protocols only, early intensification mainly with VIP/VCPE (epirubicin 50mg/m2, etoposide 500mg/m2, cisplatin 50mg/m2, iodoform phos 1350mg/m2) or DHAP regimens and autologous stem cell transplantation after BEAM (66.6% of all ASCT) was initiated. After a median follow-up of 59.7 months the 5-year overall survival (OS) of the entire group was 53.1%. In detail, 5y-OS for specific diagnoses were 62.8% for PTCL-NOS, 45.1% for AIL and 46.8% for ALC, ALK neg. Among those, patients with PTCL-NOS frequently (32/46=69.6%) presented with advanced stage (III/IV) disease. With the mentioned therapeutic approach, 31 (68.9%) PTCL-NOS patients experienced a first complete remission (CR1) after induction therapy. Primary high-dose therapy with ASCT did not result in a significantly improved 5-OS (64.6% versus 60.1%, p=0.9). Nevertheless, cumulative 5 year relapse rate (RR) for patients in CR1 was significantly worse for patients not undergoing autologous transplantation (68.0% versus 15.6%, p=0.0046). Very similar results were observed in patients with AIL, ALK neg.: 5y-OS with/without primary ASCT was 60.8% versus 38.5% (p=0.64); cumulative 5-year RR for patients in CR1 was 11.1% versus 40.0% (p=0.26), respectively. In contrast, in patients with AIL primary therapy with ASCT resulted in a significantly improved 5-year OS (87.5% versus 21.8%, p=0.15) and first line high dose therapy/ASCT in subsequently treated patients with T-NHL. With the mentioned therapeutic approach, 31 (68.9%) PTCL-NOS patients experienced a first complete remission (CR1) after induction therapy. Primary high-dose therapy with ASCT did not result in a significantly improved 5-OS (64.6% versus 60.1%, p=0.9). Nevertheless, cumulative 5 year relapse rate (RR) for patients in CR1 was significantly worse for patients not undergoing autologous transplantation (68.0% versus 15.6%, p=0.0046). Very similar results were observed in patients with AIL, ALK neg.: 5y-OS with/without primary ASCT was 60.8% versus 38.5% (p=0.64); cumulative 5-year RR for patients in CR1 was 11.1% versus 40.0% (p=0.26), respectively. In contrast, in patients with AIL primary therapy with ASCT resulted in a significantly improved 5-year OS (87.5% versus 21.8%, p=0.15) and first line high dose therapy/ASCT in subsequently treated patients with T-NHL.

102 UPDATE OF THE NORDIC MCL2 TRIAL UPDATE: 10-YEAR SURVIVAL 57% FOLLOWING INTENSIVE IMMUNOCHEMOTHERAPY AND ASCT, BUT LATE RELAPSES DO OCCUR

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Introduction: The concept of Mantle cell lymphoma (MCL) as an incurable disease has been questioned. In spite of the high risk characteristics of the 160 patients of the Nordic MCL2 Trial of first-line intensive immunochemotherapy followed by BEAM and autologous stem cell transplantation (ASCT) (31% with Ki-67 expression ≥29 and 19% blastoid/plasmocytoid) the first results based on 3 years median observation were encouraging, with no relapse after 5 years. Here we present an update after median 6 years observation time.

Results: The overall survival (OS) is now 57% at 10 years, but a continuous pattern of relapse has emerged, leading to 10-year event-free survival (EFS) and response duration of 43% and 54%, respectively. The MCL International prognostic index (MIPI)2,3 remained highly predictive of all endpoints. By the MIPI-biological, incorporating Ki-67, no events have occurred in the low-risk group later than 3 years after the start of treatment, leading to a 10-year EFS of 75% compared to 25% in the high-risk patients. Molecular response duration < 1 year was associated with a much shorter clinical response duration (median 2.5 years) than > 1 year. In multivariate analysis of EFS, performance status, Ki-67 expression, age and white blood cell count had independent significance.

Conclusion: A 10-year survival of 58% in aggressive MCL is highly encouraging, but late relapses warrant trials to improve treatment of MIPI high-risk patients and of maintenance treatment.