Is there a Role for Upfront Stem Cell Transplantation in Peripheral T Cell Lymphoma? No

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S. Luminari
University of Modena and Reggio Emilia, Italy
PTCL: a difficult disease

• Rare condition: 10-15% of NHL with geographic variations

• Multiple subtypes: clinically and biologically heterogeneous
  – The bad: PTCL-u, AITL, EATL, ...
  – The relatively good: ALCL ALK+

• Current available prognostic tools are good to separate the «bad» vs the «very bad» (IPI, PIT,..)

• Current approach is derived from B-cell Lymphomas (CHOP as tx backbone)
International Peripheral T-Cell and Natural Killer/T-Cell Lymphoma Study: Pathology Findings and Clinical Outcomes

International T-Cell Lymphoma Project

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Median Age (years)</th>
<th>Male</th>
<th>Stage III/IV</th>
<th>Marrow Positive</th>
<th>IPI 0/1</th>
<th>IPI 2/3</th>
<th>IPI 4/5</th>
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</thead>
<tbody>
<tr>
<td>PTCL-NOS</td>
<td>60</td>
<td>66</td>
<td>69</td>
<td>22</td>
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<td>Angioimmunoblastic</td>
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<td>56</td>
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<td>29</td>
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<td>Nasal NKTCL</td>
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<td>64</td>
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<td>Extranasal NKTCL</td>
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<td>68</td>
<td>69</td>
<td>18</td>
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<td>ATLL</td>
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<td>90</td>
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<tr>
<td>ALC, ALK+</td>
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<td>63</td>
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<tr>
<td>ALC, ALK−</td>
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<td>58</td>
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<td>15</td>
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<td>Enteropathy-type</td>
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<td>69</td>
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<td>25</td>
<td>63</td>
<td>13</td>
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<tr>
<td>Primary cutaneous ALC</td>
<td>55</td>
<td>64</td>
<td>14</td>
<td>0</td>
<td>86</td>
<td>14</td>
<td>0</td>
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<td>Hepatosplenic</td>
<td>34</td>
<td>68</td>
<td>95</td>
<td>74</td>
<td>5</td>
<td>47</td>
<td>47</td>
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<tr>
<td>Subcutaneous panniculitis-like</td>
<td>33</td>
<td>75</td>
<td>83</td>
<td>8</td>
<td>42</td>
<td>42</td>
<td>17</td>
</tr>
</tbody>
</table>

Abbreviations: IPI, International Prognostic Index; PTCL, peripheral T-cell lymphoma; NOS, not otherwise specified; NKTCL, natural killer/T-cell lymphoma; ATLL, adult T-cell leukemia/lymphoma; ALC, anaplastic large-cell lymphoma.
3.4 Consensus statement
For patients with poor-risk TCL (IPI or PIT ≥2) with a chemosensitive disease (in CR or PR) after induction chemotherapy ASCT should be delivered.

Level of evidence: III
Grade of recommendation: B
### NCCN Guidelines Version 2.2013

**Peripheral T-Cell Lymphoma**

<table>
<thead>
<tr>
<th>STAGE</th>
<th>INDUCTION THERAPY</th>
<th>Consider prophylaxis for tumor lysis syndrome (See NHODG-B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALCL, ALK+</td>
<td>Multiagent chemotherapy(^h) x 6 cycles ± RT</td>
<td>Relapse, See Additional Therapy (TCEL-5)</td>
</tr>
<tr>
<td>Stage I, II</td>
<td>Multiagent chemotherapy(^h) x 3 cycles + RT</td>
<td></td>
</tr>
<tr>
<td>Stage III, IV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage I, II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTCL, NOS</td>
<td>aalPI(^f) low/low-intermediate</td>
<td></td>
</tr>
<tr>
<td>AITL, EATL</td>
<td>aalPI(^f) high/high-intermediate</td>
<td></td>
</tr>
<tr>
<td>Stage III, IV</td>
<td>Emerging evidence and management</td>
<td>Treatment recommendations above may not apply and individualized care is necessary</td>
</tr>
</tbody>
</table>

**Stage I or II disease (aalPI low/low-intermediate)**

In patients showing CR after interim restaging, planned RT is completed. RT or HDI/ASCRT with or without RT is considered for patients showing PR at interim staging. Clinical trials including allogeneic transplant or RT is another option for this group of patients. End-of-treatment restaging is performed after completion of treatment. No further treatment is necessary for those showing CR; these patients can be monitored by follow up every 3-6 months for 5 years, and then yearly as clinically indicated. Patients with PR at end-of-treatment restaging and those with no response or progressive disease following initial or follow-up therapy are treated as described for relapsed or refractory disease.

**Stage I or II disease (aalPI high-intermediate/high) or stage III-IV**

Patients with a CR can be observed or can be consolidated with HDI/ASCRT. Local RT can be given prior to or following HDT. Patients with PR or no response or progressive disease after initial therapy are treated similarly to patients with relapsed or refractory disease.

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\(^f\)See International Prognostic Index (TCEL-A).

\(^g\)For selected patients (elderly, comorbid conditions), a trial of single-agent corticosteroid may be considered for symptom management.

\(^h\)See Suggested Treatment Regimens (TCEL-B).

\(^i\)Patients with locoregional disease receive RT.

\(^j\)See Response Criteria for Non-Hodgkin’s Lymphoma (NHODG-C).

\(^k\)Localized areas can be irradiated before or after high-dose therapy.

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Note: All recommendations are category 2A unless otherwise indicated.

Clinical Trials: NCCN believes that the best management of any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged.
ESMO and NCCN guidelines in favor of SCT in PTCL

**ESMO guidelines**

Level of evidence

- III Prospective cohort studies

Grade for recommendation

- B Strong or moderate evidence for efficacy but with a limited clinical benefit, generally recommended

**NCCN Guidelines**

Based on lower-level evidence: there is uniform NCCN consensus that the intervention is appropriate
How should a ‘standard’ of care be defined?

• New regimen is demonstrated to be better than the standard in a prospective randomized clinical trial
  – Good endpoint: OS > PFS > DFS
  – Bad endpoints: CR rate, ORR
• The standard comparator should be up-to-date and accepted
• New regimen is well tolerated and safe
• Inclusion criteria of RCT can be easily reproduced
Evidence for BMT in PTCL 1st line

No randomized prospective trials are available

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Patients, n</th>
<th>CR, %</th>
<th>Overall survival</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haioun et al. [39]</td>
<td>2000</td>
<td>32 (18 sequential chemotherapy; 14 HDT/ASCT)</td>
<td>ND</td>
<td>ND</td>
<td>Includes ALCL and precursor TCL</td>
</tr>
<tr>
<td>Gisselbrecht et al. [40]</td>
<td>2002</td>
<td>76 (43 sequential chemotherapy; 33 HDT/ASCT)</td>
<td>63</td>
<td>Sequential chemotherapy: 39% (5 y); HDT/ASCT: 32% (5 y)</td>
<td>Includes ALCL and precursor TCL</td>
</tr>
<tr>
<td>Mounier et al. [42]</td>
<td>2004</td>
<td>16</td>
<td>ND</td>
<td>54% (5 y)</td>
<td>Non-ALCL PTCL only</td>
</tr>
</tbody>
</table>

PTCL were included with ALCL and with other aggressive lymphomas

Overall, results of RCTs were discordant and cannot be used not in favor of ASCT in 1° line
Evidence for BMT is PTCL 1st line

Retrospective PTCL specific studies are available

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Patients, n</th>
<th>CR, %</th>
<th>Overall survival</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schetelig et al. [29]</td>
<td>2003</td>
<td>15</td>
<td>67</td>
<td>44% (5 y)</td>
<td>AIL only</td>
</tr>
<tr>
<td>Rodriguez et al. [28]</td>
<td>2007</td>
<td>19</td>
<td>79</td>
<td>60% (5 y)</td>
<td>AIL only</td>
</tr>
<tr>
<td>Rodriguez et al. [57]</td>
<td>2007</td>
<td>74</td>
<td>ND</td>
<td>68% (5 y)</td>
<td>Includes ALCL</td>
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<tr>
<td>Feyler et al. [58]</td>
<td>2007</td>
<td>64</td>
<td>ND</td>
<td>53% (3 y)</td>
<td>Includes ALK-positive ALCL</td>
</tr>
<tr>
<td>Kyriakou et al. [43]</td>
<td>2008</td>
<td>146</td>
<td>70</td>
<td>59% (4 y)</td>
<td>AIL only</td>
</tr>
<tr>
<td>Lee et al. [44]</td>
<td>2008</td>
<td>47</td>
<td>ND</td>
<td>86% (5 y DFS)</td>
<td>Extranodal PTCL only</td>
</tr>
<tr>
<td>Yang et al. [45]</td>
<td>2009</td>
<td>64</td>
<td>ND</td>
<td>53% (3 y)</td>
<td>PTCL-NOS only</td>
</tr>
</tbody>
</table>

These studies have the biases of retrospective studies, also include ALCL, possible selection of the best patients
Overall, they cannot be used at all in favor of ASCT in 1° line
Evidence for BMT is PTCL 1st line

Prospective PTCL restricted studies

Table 2. PTCL-restricted prospective trials of upfront autologous stem cell transplantation in systemic PTCL

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<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>ALK+ ALCI</td>
<td>62 (includes ALK+ ALCI)</td>
<td>26</td>
<td>41</td>
<td>83</td>
<td>166</td>
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<tr>
<td>Median age, y</td>
<td>57</td>
<td>EP-14 → BEAM</td>
<td></td>
<td></td>
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<tr>
<td>Regimen</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Tx rate, %</td>
<td>71</td>
<td>83</td>
<td>7</td>
<td>57% (3 y)</td>
<td></td>
</tr>
<tr>
<td>ORR, %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>TRM, %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow-up</td>
<td>76 mo</td>
<td>35 mo</td>
<td>3.2 y (survivors)</td>
<td>33 mo</td>
<td>45 mo</td>
</tr>
</tbody>
</table>

ALCL—anaplastic large-cell lymphoma; ALK—anaplastic lymphoma kinase (protein); APO—doxorubicin, vincristine, prednisone; BEAC—carmustine, etoposide, ara-C, cyclophosphamide; BEAM—carmustine, etoposide, ara-C, melphalan; CHOEP—cyclophosphamide, doxorubicin, etoposide, vincristine, prednisone; CHOP—cyclophosphamide, doxorubicin, vincristine, prednisone; DHAP—cisplatin, cytarabine, dexamethasone; ESHAP—etoposide, cisplatin, cytarabine, prednisone; HD—high-dose; IFE—ifosfamide and etoposide; MACOP-B—methotrexate, doxorubicin, cyclophosphamide, vincristine, prednisone, bleomycin; ND—not done; ORR—overall response rate; OS—overall survival; PTCL—peripheral T-cell lymphomas; TBI—total body irradiation; TRM—treatment-related mortality; Tx—patients undergoing transplantation.

Is the ASCT effective or is the Improved initial chemotherapy more able to select responding patients?

Encouraging results!!... However...Not randomized.

Some are very small series; Tx rate varies from 41 to 74%.

~ 20% relapse within the first year after ASCT, + ~10% by 2 years post ASCT

CHOP was not used!!
What really makes BMT effective?

• High dose chemotherapy itself
• Patient selection (risk groups)
• How the patients get to BMT
  – Quality of response (CR vs < CR)
  – Quantity of responding patients (Tx rate)
Risk assessment in PTCL

Figure 6. Event-free survival and overall survival of 70 patients with PTCLU according to the IPI.
Induction therapy in PTCL

CHOP has been the backbone of initial therapy for many years but today is known to be inadequate.
## Moving away from CHOP in PTCL

<table>
<thead>
<tr>
<th>Combination/Study type</th>
<th>Subtype(s)</th>
<th>ORR% (CR%)</th>
<th>EFS/FFS/PFS</th>
<th>OS</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIP/ABVD vs CHOP8 phase 3&lt;sup&gt;6&lt;/sup&gt;</td>
<td>PTCL (N = 86)</td>
<td>58 (44)</td>
<td>2-y 45% vs 41%, <em>p = .70</em></td>
<td>Median OS 42 mo for both (median follow-up 110 mo)</td>
</tr>
<tr>
<td>CHOP (like) vs CHOP (like) plus etoposide retrospective analysis of phase 3 trials&lt;sup&gt;7&lt;/sup&gt;</td>
<td>PTCL-NOS, ALC, AILT (N = 331; &lt;60 y of age, normal LDH)*</td>
<td>N/A</td>
<td>3-y 71% vs 51%, <em>p = .004</em></td>
<td>3-y 81% vs 75%, <em>P = .285</em> (median follow-up 44 mo)</td>
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<tr>
<td></td>
<td>PTCL-NOS, ALK&lt;sup&gt;+&lt;/sup&gt;, AILT ALK&lt;sup&gt;+&lt;/sup&gt;</td>
<td></td>
<td>3-y 61% vs 48%, <em>p = .057</em></td>
<td>Not reported</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>3-y 91% vs 82%, <em>p = .012</em></td>
<td>Not reported</td>
</tr>
<tr>
<td>CycloBEAP phase 2 (abstract)&lt;sup&gt;8&lt;/sup&gt;</td>
<td>PTCL, ALC, AILT (N = 84)</td>
<td>(92)</td>
<td>5-y 69%</td>
<td>5-y 72% (median follow-up 82 mo)</td>
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<tr>
<td>CHOP-alemtuzumab phase 2&lt;sup&gt;12&lt;/sup&gt;</td>
<td>Exclude ALK&lt;sup&gt;+&lt;/sup&gt; (N = 20, 17-65 y)</td>
<td>80 (65)</td>
<td>1-y 43%</td>
<td>1-y 44% (median follow-up ~7 mo)</td>
</tr>
<tr>
<td>CHOP-alemtuzumab phase 2&lt;sup&gt;13&lt;/sup&gt;</td>
<td>PTCL-NOS, AILT, ALK&lt;sup&gt;+&lt;/sup&gt; (N = 24, 16-70 y)</td>
<td>(71)</td>
<td>2-y 48%</td>
<td>2-y 53% (median follow-up ~17 mo)</td>
</tr>
<tr>
<td>CHOP-denileukin diftitox phase 2 (abstract)&lt;sup&gt;17&lt;/sup&gt;</td>
<td>All PTCLs (N = 49)</td>
<td>65 (51)</td>
<td>Median PFS 12 mo</td>
<td>2-y 60% (median follow-up not reported)</td>
</tr>
<tr>
<td>CHOP and bortezomib phase 2 (abstract)&lt;sup&gt;57&lt;/sup&gt;</td>
<td>Exclude ALK&lt;sup&gt;-&lt;/sup&gt; ALC (N = 46)</td>
<td>76 (65)</td>
<td>Not reported</td>
<td>Not reported</td>
</tr>
<tr>
<td>PEGs phase 2 (abstract)&lt;sup&gt;23&lt;/sup&gt;</td>
<td>Exclude ALK&lt;sup&gt;+&lt;/sup&gt; (N = 34, 79% newly diagnosed)</td>
<td>Not reported</td>
<td>1-y 38%</td>
<td>Not reported (median follow-up 13 mo)</td>
</tr>
<tr>
<td>GIFOX phase 2 (abstract)&lt;sup&gt;24&lt;/sup&gt;</td>
<td>Exclude ALC (N = 21, High-risk IPI 3-5)</td>
<td>86 (67)</td>
<td>5-y 49%</td>
<td>Median survival 30.5 mo (median follow-up not reported)</td>
</tr>
</tbody>
</table>

*Survival estimates are rounded off.*
Moving away from CHOP in PTCL
The german experience with CHOEP

EFS: age < 60 y, LDH ≤ UNL

EFS: ALK +, age < 60 y, LDH ≤ UNL

Schmitz N et al. Blood 2010
Multicentre phase II study of the CyclOBEAP regimen for patients with peripheral T-cell lymphoma with analysis of biomarkers (N=84)

...None of the patients...received haematopoietic stem cell transplantation after CyclOBEAP.

Drug                               | Dose     | Days  |
-----------------------------------|----------|-------|
Doxorubicin                        | 50 mg/m² | 1, 15, 29, 43, 57, 71 |
Cyclophosphamide                  | 1000 mg/m² | 1, 29, 57 |
Etoposide                          | 70 mg/m² x 4 d | 15–18, 43–46, 71–74 |
Vincristine                        | 1·4 mg/m² iv | 8, 22, 36, 50, 64, 78 |
Bleomycin                          | 10 mg/m² iv | 8, 36, 64 |
Prednisolone                       | 40 mg/m² x 14 d po | 1–14, 29–42, 57–70 |
Phase 2 study of Dose Adjusted EPOCH in PTCL Patients Rx 1999-2009

Overall Survival

ALK -
ALK +
ALK – versus +: p=0.95

Other subtypes

85%
50%
Median follow-up 10 years

Dunleavy et al ASH 2011
How to make advances in the treatment of PTCL

• Improve patient and disease selection
• Identify better induction therapies
• New drugs
What to do if a better induction therapy is identified....

- Address more patients to BMT?
- Reconsider BMT under to condition of more affective therapies (clinical trial)...

Schmitz N et al. Blood 2010
there are so many new drugs or at least drugs new to PTCL

<table>
<thead>
<tr>
<th>Drug</th>
<th>New Drugs</th>
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<tbody>
<tr>
<td>CD 52-alemtuzumab</td>
<td>Pralatrexate</td>
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<tr>
<td>IL2 R-Denileukin Diftitox</td>
<td>Depsipeptide</td>
</tr>
<tr>
<td>Pentostatin</td>
<td>Everolimus</td>
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<tr>
<td>L-Asparaginase</td>
<td>Syk inhibitors</td>
</tr>
<tr>
<td>Nelarabine</td>
<td>Enzastaurin</td>
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<tr>
<td>Clofarabine</td>
<td>Anti-CD 4</td>
</tr>
<tr>
<td>Vorinostat</td>
<td>Anti-CD 2</td>
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<tr>
<td>Bortezomib</td>
<td>Anti-CD 30 conjugated (SGN35)</td>
</tr>
<tr>
<td>Lenalidomide</td>
<td>Chemokine receptors</td>
</tr>
<tr>
<td>Temsirolimus</td>
<td>Fodosine</td>
</tr>
<tr>
<td>CSA</td>
<td>Plitidepsin</td>
</tr>
<tr>
<td>Sorafenib</td>
<td>Others...</td>
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</table>
# Proposed Treatment

## 4 groups could be proposed:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong> CD30 + entities</td>
<td>SGN35-chemo</td>
<td></td>
</tr>
<tr>
<td><strong>2.</strong> NKTCL</td>
<td>asparaginase based regimens</td>
<td></td>
</tr>
<tr>
<td><strong>3.</strong> TCR γδ T-cell lymphomas</td>
<td>CHOP + consolidation with IVE/MTX-ASCT <em>(NCRI 1418 trial)</em></td>
<td></td>
</tr>
</tbody>
</table>
| **4.** All other histologies | » CHOP like  
 » Etoposide based regimens  
 » ASCT  
 » Allotransplant |
Upfront BMT in PTCL

• The real Life
  – Data from the Modena Cancer registry
  – Data From the T Cell Project
T-CELL LYMPHOMA IN THE PROVINCE OF MODENA (1997-2010)

128 cases

- 24 Died within 3 mos from diagnosis
- 4 No Tx because of their co morbidity

100 cases

- 7 HDS/SCT as first line treatment
- 74 CT
- 10 Surgery
- 9 RT only

HDS/SCT as salvage treatment

Courtesy of Modena Cancer Registry, unpublished data
# DISTRIBUTION by GEOGRAPHIC AREA (%)

according to reviewed histology (when applicable)

\[ N = 940 \]

<table>
<thead>
<tr>
<th></th>
<th>Overall</th>
<th>Europe</th>
<th>North America</th>
<th>South America</th>
<th>Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTCL-NOS</td>
<td>37</td>
<td>38</td>
<td>38</td>
<td>43</td>
<td>26</td>
</tr>
<tr>
<td>AITL</td>
<td>17</td>
<td>20</td>
<td>20</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>ALCL, ALK-</td>
<td>15</td>
<td>16</td>
<td>13</td>
<td>25</td>
<td>6</td>
</tr>
<tr>
<td>ALCL, ALK+</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>NK/T nasal, nasal type, lymphoma/leukemia</td>
<td>11</td>
<td>5</td>
<td>8</td>
<td>11</td>
<td>30</td>
</tr>
<tr>
<td>Other histologies</td>
<td>13</td>
<td>14</td>
<td>12</td>
<td>7</td>
<td>19</td>
</tr>
</tbody>
</table>

![Pie charts showing distribution by geographic area](image)
## Actual therapy in PTCL

**N=1024; Validated 940; With treatment details 508**

<table>
<thead>
<tr>
<th></th>
<th>CHT+HTcons</th>
<th>CHT+HTsalvage</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTCL-NOS</td>
<td>5,6%</td>
<td>9%</td>
</tr>
<tr>
<td>AITL</td>
<td>13,6%</td>
<td>12%</td>
</tr>
<tr>
<td>ALCL, ALK-</td>
<td>8,7%</td>
<td>10%</td>
</tr>
<tr>
<td>ALCL, ALK+</td>
<td>7,9%</td>
<td>3%</td>
</tr>
<tr>
<td>Hepatosplenic</td>
<td>10,0%</td>
<td>30%</td>
</tr>
<tr>
<td>Enteropathy-type</td>
<td>9,1%</td>
<td>9%</td>
</tr>
<tr>
<td>All cases</td>
<td>7,7%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Courtesy of [T-cell Project](#), unpublished data
### Actual therapy in PTCL (<60 yrs)

**N=1024; Validated 940; With treatment details 508**

<table>
<thead>
<tr>
<th>Subtype</th>
<th>CHT+HTcons</th>
<th>CHT+HTsalvage</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTCL-NOS</td>
<td>8.3%</td>
<td>15%</td>
</tr>
<tr>
<td>AITL</td>
<td>25.0%</td>
<td>19%</td>
</tr>
<tr>
<td>ALCL, ALK-</td>
<td>13.0%</td>
<td>13%</td>
</tr>
<tr>
<td>ALCL, ALK+</td>
<td>8.6%</td>
<td>3%</td>
</tr>
<tr>
<td>Hepatosplenic</td>
<td>11.1%</td>
<td>33%</td>
</tr>
<tr>
<td>Enteropathy-type</td>
<td>11.1%</td>
<td>11%</td>
</tr>
<tr>
<td>All cases</td>
<td>11.1%</td>
<td>13%</td>
</tr>
</tbody>
</table>

*Courtesy of T-cell Project, unpublished data*
Conclusions

• The use of BMT in PTCL was justified by the aggressiveness of the disease

• The evidence to support the usefulness of frontline HDT/ASCT in PTCL is limited

• Until we don’t improve the activity of induction therapy the question of BMT applies to only a minority of cases
## T-cell lymphoma in the Province of Modena (1997-2010)

<table>
<thead>
<tr>
<th>Histology</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angioimmunoblastic T-cell lymphoma (AILT)</td>
<td>15</td>
<td>11.8</td>
</tr>
<tr>
<td>Anaplastic large T-cell lymphoma</td>
<td>46</td>
<td>35.9</td>
</tr>
<tr>
<td><strong>ALK</strong>+</td>
<td>6</td>
<td>13.0</td>
</tr>
<tr>
<td><strong>ALK</strong>-</td>
<td>21</td>
<td>45.6</td>
</tr>
<tr>
<td><strong>Unspecified</strong></td>
<td>19</td>
<td>41.4</td>
</tr>
<tr>
<td>Peripheral T-cell lymphoma, NOS (PTCL-NOS)</td>
<td>46</td>
<td>35.9</td>
</tr>
<tr>
<td>Other histotype</td>
<td>21</td>
<td>16.4</td>
</tr>
<tr>
<td><strong>Entheropaty-associated T-cell lymphoma</strong></td>
<td>10</td>
<td>47.6</td>
</tr>
<tr>
<td><strong>T/NK-cell lymphoid neplasm, nasal type</strong></td>
<td>6</td>
<td>28.6</td>
</tr>
<tr>
<td><strong>Primary cutaneous ALCL</strong></td>
<td>3</td>
<td>14.2</td>
</tr>
<tr>
<td><strong>Cutaneous T-cell lymphoma, NOS</strong></td>
<td>1</td>
<td>4.8</td>
</tr>
<tr>
<td><strong>Subcutaneous panniculitis like T-cell lymphoma</strong></td>
<td>1</td>
<td>4.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>128</td>
<td>100</td>
</tr>
</tbody>
</table>

*Courtesy of Modena Cancer Registry, unpublished data*