May 8th, 12:30 PM - 1:30 PM

A Multicenter Phase 2 Study Incorporating High-Dose Rituximab into the CODOX-M/IVAC Regimen for Untreated Burkitt’s Lymphoma (BL): Examination of Correlative Serum and CSF Rituximab Levels

Andrew Evens  
*University of Massachusetts Medical School*

Nahida Islam  
*University of Massachusetts Medical School Worcester*

Kenneth Carson  
*Washington University*

*See next page for additional authors*

Follow this and additional works at: [https://escholarship.umassmed.edu/cts_retreat](https://escholarship.umassmed.edu/cts_retreat)

Part of the *Hematology Commons, Hemic and Lymphatic Diseases Commons, Neoplasms Commons, Oncology Commons, Therapeutics Commons*, and the *Translational Medical Research Commons*

---

Evens, Andrew; Islam, Nahida; Carson, Kenneth; Browning, Victoria; Nabhan, Chadi; Jovanovic, Borko; Barr, Paul M.; Caimi, Paoli; Gregory, Stephanie A.; Kolesar, Jill M.; and Gordon, Leo L., 'A Multicenter Phase 2 Study Incorporating High-Dose Rituximab into the CODOX-M/IVAC Regimen for Untreated Burkitt’s Lymphoma (BL): Examination of Correlative Serum and CSF Rituximab Levels' (2013). *UMass Center for Clinical and Translational Science Research Retreat.* 60.  
[https://escholarship.umassmed.edu/cts_retreat/2013/posters/60](https://escholarship.umassmed.edu/cts_retreat/2013/posters/60)

This material is brought to you by eScholarship@UMMS. It has been accepted for inclusion in UMass Center for Clinical and Translational Science Research Retreat by an authorized administrator of eScholarship@UMMS. For more information, please contact Lisa.Palmer@umassmed.edu.
A Multicenter Phase 2 Study Incorporating High-Dose Rituximab into the CODOX-M/IVAC Regimen for Untreated Burkitt’s Lymphoma (BL): Examination of Correlative Serum and CSF Rituximab Levels

Andrew M. Evens, DO, MSc1, Islam, Nahida, MD1, Kenneth Carson, MD2, Victoria Browning, PhD3, Chadi Nabhan, MD, FACP4, Borko Jovanovic, PhD5, Paul M. Barr, MD6, Paolo Caimi, MD7, Stephanie A. Gregory, MD8, Jill M. Kolesar, PharmD3, Leo I. Gordon, MD9

1Division of Hematology/Oncology, The University of Massachusetts, Worcester, MA; 2Division of Hematology/Oncology, Washington University, St. Louis, MO; 3School of Pharmacy, University of Wisconsin Carbone Cancer Center, University of Wisconsin, Madison, WI; 4Oncology Specialists, S.C., Lutheran General Hospital Cancer Center, Park Ridge, IL; 5Department of Preventive Medicine, Northwestern University, Chicago, IL; 6Division of Hematology/Oncology, University of Rochester, Rochester, NY; 7Division of Hematology/Oncology, Case Western Reserve University, Cleveland, OH; 8Division of Hematology/Oncology, Rush University Medical Center, Chicago, IL; 9Division of Hematology/Oncology, Northwestern University, Chicago, IL;

Background: Two-year survival rates for adult BL remain <60-65%. Furthermore, there is a paucity of data adding Rituximab to CODOX-M/IVAC therapy and virtually no data regarding the significance of serum or cerebrospinal fluid (CSF) levels.

Methods: Twenty-five BL patients were enrolled. Patients had low-risk (LR) or high-risk (HR) disease; LR patients received 3 CODOX-M cycles, while HR had 4 alternating CODOX-M/IVAC cycles (Mead et al. Blood 2009). Rituximab (500mg/m2) was given x 2 doses each cycle. Correlative analyses of paired serum and CSF Rituximab levels were obtained for cycles 1+3 at 24+72 hours.

Results: There were 20 HR and 5 LR patients and median age was 44 years (range, 23-70). 3 HR and 1 LR patient were HIV+, while 15% of HR patients had CNS disease. Additionally, 35% of HR patients had bulk >10 cm and 40% had bone marrow involvement. Myelosuppression and mucositis appeared comparable with prior CODOX-M/IVAC data. The overall remission rate after 2 cycles was 100% with 67% complete remission. At 34-month median follow-up, 2-year PFS and OS rates for all patients were 86% and 86%, respectively (LR 2-year PFS and OS: both 100%; HR 2-year PFS and OS: both 82%). Further, the 2-year PFS and OS for HR, HIV-negative patients were 91% and 91%, respectively (disease-specific survival 100%). Two patients died from progressive disease (both HIV+ HR). The median serum and CSF rituximab levels for these patients were compared with patients without relapse (Table 1). Interestingly, cycle 1, 24-hour serum Rituximab levels were significantly higher among patients without relapse compared with the two patients who relapsed/died (P=0.042). Cycle 3, 24-hour Rituximab levels were of borderline significance (P=0.06).

Conclusions: The integration of Rituximab into CODOX-M/IVAC was associated with excellent survival rates, especially for HIV-negative BL. Further investigation of the predictive value of serum Rituximab levels is warranted.
Table 1. Rituximab Levels for Patients Without and With Disease Relapse.

<table>
<thead>
<tr>
<th>Chemotherapy cycle/hours after R infusion</th>
<th>Median serum R level (ng/ml) for pts without relapse</th>
<th>Serum R level for 2 pts with relapse</th>
<th>Median CSF R level (ng/ml) for pts without relapse</th>
<th>CSF R levels for 2 pts with relapse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pt #1</td>
<td>Pt #2</td>
<td>Pt #1</td>
<td>Pt #2</td>
</tr>
<tr>
<td>C1/24h</td>
<td>258,135</td>
<td>170,770</td>
<td>91,180</td>
<td>104</td>
</tr>
<tr>
<td>C1/72h</td>
<td>139,425</td>
<td>60,470</td>
<td>29,780</td>
<td>253</td>
</tr>
<tr>
<td>C3/24h</td>
<td>306,400</td>
<td>162,190</td>
<td>224,360</td>
<td>246</td>
</tr>
<tr>
<td>C3/72h</td>
<td>218,850</td>
<td>149,680</td>
<td>135,450</td>
<td>196</td>
</tr>
</tbody>
</table>

Abbreviations: C, cycle; h, hours; pt, patient; R, Rituximab.

Figure 1. Survival for High-Risk, HIV-Negative BL.