# SUPPLEMENTAL TABLES

**Supplemental Table 1.** **Medical professional visit, lab, and procedure cost inputs by tisagenlecleucel treatment period (2019 USD)a**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameters** | **Unit Cost** | **Frequency** | | | |
| **Pre-treatment** | **Infusion** | **Follow-up** | |
| **Month 1** | **Month 2** |
| **Medical and professional visits** |  |  |  |  |  |
| Physician visit | $51.90 | 2 | 1 | 10 | 2 |
| Nurse visit | $25.95 | 7 | 1 | 15 | 1 |
| **Lab tests and procedures** |  |  |  |  |  |
| Leukapheresis | $2,012.80 | 1 | 0 | 0 | 0 |
| Chemistry | $157.84 | 1 | 1 | 8 | 1 |
| Hematology | $14.06 | 1 | 1 | 8 | 1 |
| Hepatitis B and C test | $45.94 | 1 | 0 | 0 | 0 |
| HIV test | $19.21 | 1 | 0 | 0 | 0 |
| Influenza A and B test | $30.04 | 1 | 0 | 0 | 0 |
| Urine pregnancy test | $11.21 | 1 | 0 | 0 | 0 |
| Coagulation | $61.20 | 0 | 1 | 3 | 0 |
| Electrocardiogram (ECG) | $15.04 | 0 | 1 | 0 | 0 |
| Pulse oximetry | $19.04 | 0 | 1 | 5 | 0 |
| Bone marrow biopsy and/or aspirate | $122.04 | 0 | 0 | 1 | 0 |
| Flow cytometry | $48.18 | 0 | 0 | 7 | 1 |
| Imaging (PET-CT) | $465.24 | 0 | 0 | 1 | 0 |
| Serum immunoglobulin | $43.10 | 0 | 0 | 2 | 0 |

**Abbreviations:** HIV, human immunodeficiency virus; PET-CT, positron emission tomography-computed tomography; USD, United States dollars

**Note:**

a The frequency of medical and professional visits, lab tests, and procedures are based on the JULIET trial protocol.

**Supplemental Table 2. Adverse event rates and unit cost inputsa**

|  |  |  |  |
| --- | --- | --- | --- |
| **Grade 3 or 4 AEs ≥ 5%** | **Proportion of**  **patients with AE** | **Cost per event** | **Sources for unit cost** |
| **Anemia** | 39.1% | $9,501.79 | HCUP inpatient database |
| **B-cell aplasia** | 18.3% | $4,520.11 | The IVIG cost is calculated in Table 3 |
| **Cytokine-release syndrome** | 22.6% | $20,375.39 | The CRS event cost is calculated in Table 3 |
| **Fatigue** | 6.1% | $11,015.24 | HCUP inpatient database |
| **Febrile neutropenia** | 16.5% | $19,984.81 | HCUP inpatient database |
| **Hypokalemia** | 8.7% | $7,027.44 | HCUP inpatient database |
| **Hypophosphatemia** | 13.0% | $7,345.62 | HCUP inpatient database |
| **Hypotension** | 8.7% | $8,145.30 | HCUP inpatient database |
| **Neutropenia** | 20.0% | $13,357.01 | HCUP inpatient database |
| **Neutrophil count decreased** | 33.9% | $13,357.01 | HCUP inpatient database |
| **Platelet count decreased** | 27.8% | $12,562.64 | HCUP inpatient database |
| **Pyrexia** | 5.2% | $7,330.77 | HCUP inpatient database |
| **Thrombocytopenia** | 12.2% | $12,562.64 | HCUP inpatient database |
| **White blood cell count decreased** | 32.2% | $8,063.63 | HCUP inpatient database |

**Abbreviations:** AE, adverse event; CRS, cytokine-release syndrome; HCUP, Healthcare Cost and Utilization Project; IVIG, intravenous immunoglobulin

**Note:**

a The AEs are based on the JULIET trial protocol with rates estimated from the trial data.

**Supplemental Table 3. HRU and CRS rate for tisagenlecleucel based on Riedell et al.**

|  |  |
| --- | --- |
| **Parameter** | **Results** |
| Proportion of inpatient administration | 36% |
| Median LOS | 2 days |
| Proportion of patients with ICU transfer | 7% |
| Median ICU stay | 4 days |
| Grade 3/4 CRS per ASTCTa | 1% |
| Tocilizumab use | 14% |

**Abbreviations:** ASTCT, American Society for Transplantation and Cellular Therapy; CRS, cytokine release syndrome; HRU, healthcare resource use; ICU, intensive care unit; LOS, length of stay.

**Note:**

a The ASTCT consensus criteria were used to assess CRS.

# SUPPLEMENTAL METHODS: PREMIER DATABASE ANALYSIS

**Premier Healthcare Database**

The Premier Healthcare Database (Premier) is a large United States (US) hospital-based, service-level database. It provides detailed resource utilization data along with patients’ primary and secondary diagnoses and procedure codes in both inpatient and outpatient facility settings. In any given recent year, more than 500 hospitals contributed to the inpatient database using a common platform. Approximately 375 hospitals also submit hospital outpatient data. Detailed service level information is available for each hospital day and includes medications (i.e., drug name and strength, quantity dispensed, and unit cost). Patient information collected includes patient demographics (age, gender, and race/ethnicity), principal and secondary diagnoses, principal and secondary procedures, payer, length of stay, cost of care, drug utilization, and physician specialty. All payers are included, including both public and private. Costs are either actual costs reported by hospitals or derived from charges using cost to charge ratio.

**Sample Selection and Analyses**

Patients were included in this study if they had at least one admitting, primary, or secondary diagnosis of diffuse large B-cell lymphoma (DLBCL). DLBCL diagnosis was identified based on International Classification of Diseases, Ninth Revision and Tenth Revision, Clinical Modification (ICD-9 and ICD-10) codes. Patients with autologous or allogeneic stem cell transplantations were excluded. Stem cell transplantations were identified based on ICD-9 and ICD-10 procedure codes, Current Procedural Terminology codes, and Healthcare Common Procedure Coding System codes. The below figure illustrates the sample selection results.

*Sample selection flowchart*

|  |
| --- |
| Patients with at least one admitting, primary, or secondary diagnosis of DLBCL in the Premier Healthcare Database (2015 Q4 - 2018 Q2)  N = 39,748 |

**↓**

|  |
| --- |
| Patients who did not receive stem cell transplantation  N = 37,932 |

**↓ ↓**

|  |  |  |
| --- | --- | --- |
| Patients with admitting or primary DLBCL diagnosis  N = 28,626 |  | Patients with secondary DLBCL diagnosis only  N = 9,306 |

**Abbreviations**: DLBCL, diffuse large B-cell lymphoma; Q, quarter.

Average daily costs of inpatient and ICU room and board were analyzed for inpatient hospital encounters with an admitting or primary diagnosis of DLBCL. Average unit costs of laboratory tests and procedures were analyzed for inpatient or outpatient hospital encounters with an admitting, primary, or secondary diagnosis of DLBCL.