**Patient**: R.T. (DOB 1956-06-14)  
**MRN**: 728391  
**Admission**: 2024-03-10 | **Discharge**: 2024-03-30  
**Physicians**: Dr. M. Garcia (Hematology/Oncology), Dr. L. Chen (Neurology), Dr. S. Williams (Infectious Disease), Dr. J. Patel (Cardiology)

**DISCHARGE DIAGNOSIS**

Multiple Myeloma, Post-CAR-T Cell Therapy (Carvykti/ciltacabtagene autoleucel)

**ONCOLOGICAL DIAGNOSIS**

* **Primary**: Multiple Myeloma, IgA Kappa, Relapsed/Refractory
* **Diagnosed**: June 2021
* **Initial Diagnostic Criteria**:
  + Bone marrow: 40% clonal plasma cells
  + Monoclonal protein: IgA kappa, 3.2 g/dL
  + Multiple lytic lesions in skull, ribs, spine
  + Anemia: Hemoglobin 8.9 g/dL
  + Hypercalcemia: 11.2 mg/dL
  + Renal function: Normal (Cr 1.0 mg/dL)
* **Cytogenetics/FISH**: t(4;14), Gain of 1q21 (3 copies), No del(17p)
* **Staging**:
  + ISS: Stage II (β2-M 4.5 mg/L, albumin 3.6 g/dL)
  + R-ISS: Stage II (high-risk cytogenetics, LDH 195 U/L)

**CURRENT TREATMENT**

**CAR-T Cell Therapy**:

* Product: Carvykti (ciltacabtagene autoleucel), BCMA-directed
* Dose: 0.75 × 10^6 CAR+ viable T cells/kg (total 60 × 10^6 cells)
* Infusion date: March 12, 2024

**Lymphodepletion**:

* Fludarabine 30 mg/m² IV daily × 3 days (March 8-10)
* Cyclophosphamide 300 mg/m² IV daily × 3 days (March 8-10)

**Supportive Care**:

* Tocilizumab 8 mg/kg IV × 2 doses (March 14, 16) for Grade 2 CRS
* Dexamethasone 10 mg IV × 1 dose (March 16) for CRS not responding to tocilizumab
* IVIG 400 mg/kg IV (March 28) for hypogammaglobulinemia
* G-CSF 480 mcg SC daily × 3 doses (March 21-23) for neutropenia
* Antimicrobial prophylaxis: Acyclovir, posaconazole, levofloxacin (d/c March 24)

**Notable Events/Complications**:

* Grade 2 CRS requiring tocilizumab × 2 doses and dexamethasone × 1 dose
* Grade 1 ICANS with spontaneous resolution
* Grade 3 neutropenia responding to G-CSF
* Grade 2 thrombocytopenia (nadir 42 × 10^9/L) without bleeding
* No documented infections
* Hypogammaglobulinemia (IgG 350 mg/dL) requiring IVIG replacement
* No significant organ toxicities (renal, hepatic, cardiac)

**TREATMENT HISTORY**

**First-Line** (June 2021 - January 2022):

* VRd regimen → Partial response (PR)
* Autologous stem cell transplant (January 2022) → VGPR
* Maintenance: Lenalidomide 10 mg daily

**First Relapse** (November 2022):

* DKd regimen (daratumumab, carfilzomib, dexamethasone) → VGPR after 8 cycles

**Second Relapse** (August 2023):

* IsaPd regimen (isatuximab, pomalidomide, dexamethasone) → Initial response then progression after 4 cycles

**Third Relapse** (December 2023):

* SVd bridge therapy (selinexor, bortezomib, dexamethasone) → Progressive disease
* Leukapheresis: February 15, 2024

**Pre-CAR-T Status**:

* Triple-class refractory (IMiDs, PIs, anti-CD38)
* Progressive disease with rising paraprotein, new bone lesions
* Bone marrow (February 2024): 45% clonal plasma cells
* BCMA expression: Positive (>80% of plasma cells)

**COMORBIDITIES**

* Hypertension (2010, controlled)
* Type 2 Diabetes Mellitus (2015, HbA1c 6.8% pre-admission)
* Secondary hyperparathyroidism due to Vitamin D deficiency
* History of DVT (2021, during initial myeloma therapy)
* Moderate osteoarthritis of both knees
* GERD

**HOSPITAL COURSE**

Patient received lymphodepletion followed by CAR-T infusion on March 12. Developed Grade 2 CRS on day +2 post-infusion requiring tocilizumab. CRS symptoms worsened on day +4, necessitating second tocilizumab dose and dexamethasone, with subsequent resolution. Experienced Grade 1 ICANS on day +8 (word-finding difficulties, fine tremor) that resolved spontaneously.

Developed expected cytopenias with neutrophil and platelet nadirs on days 9-12, requiring G-CSF with subsequent count recovery. Received IVIG for hypogammaglobulinemia before discharge.

Initial response assessment showed promising decrease in M-protein from 2.8 g/dL to 1.2 g/dL. Discharged on day +18 in stable condition.

**DISCHARGE MEDICATIONS**

**CAR-T Related**:

* Acyclovir 400 mg PO BID (continue ≥12 months post-CAR-T)
* Posaconazole 300 mg PO daily (continue until day +90)
* TMP-SMX 800/160 mg PO MWF (continue until CD4 >200/μL)

**Chronic Medications**:

* Metformin 500 mg PO BID
* Lisinopril 10 mg PO daily
* Pantoprazole 40 mg PO daily
* Apixaban 5 mg PO BID
* Calcium carbonate 600 mg PO daily
* Vitamin D3 2000 IU PO daily
* Zoledronic acid 4 mg IV q4w

**PRN Medications**:

* Acetaminophen 650 mg PO Q6H PRN pain/fever
* Ondansetron 4 mg PO Q8H PRN nausea
* Lorazepam 0.5 mg PO Q8H PRN anxiety/insomnia

**FOLLOW-UP PLAN**

**Short-term**:

* CAR-T clinic: April 2, 2024 (day +21)
* CBC, CMP, immunoglobulins twice weekly for first 4 weeks
* SPEP, UPEP, immunofixation, and sFLC at day 28
* First formal response assessment at day 28 including zoledronic acid infusion

**Monitoring**:

* Daily temperature checks at home
* Weekly CBC, CMP for 8 weeks post-discharge
* Regular assessment for late-onset CRS/ICANS (up to 8 weeks)
* Routine assessment for B-cell aplasia and hypogammaglobulinemia

**Long-term**:

* Monthly clinic visits for first 6 months
* IgG level monitoring every 3 months; IVIG if IgG <400 mg/dL or recurrent infections
* Bone marrow assessment at 3 months if response evident
* PET/CT at 3 months if initial response documented
* Resume age-appropriate cancer screening at 6 months

**Vaccinations**:

* All live vaccines contraindicated until immune recovery
* Inactivated vaccine series to begin ~12 months post-CAR-T

**When to Seek Emergency Care**:

* Fever ≥38.3°C (101°F)
* New/worsening confusion, speech difficulty, altered mental status
* New/worsening shortness of breath or chest pain
* Persistent headache, dizziness, blurry vision
* Shaking chills, severe fatigue, feeling faint

**Restrictions**:

* No driving for 8 weeks post-infusion
* Avoid crowds/infections for 3 months
* No heavy lifting (>10 lbs) for 2 weeks
* Low-microbial diet for 3 months

**KEY LAB VALUES**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Pre-Lymphodepletion** | **Pre-Discharge** | **Reference** |
| WBC | 4.8 | 3.2 | 4.0-11.0 × 10^9/L |
| ANC | 3.1 | 2.1 | 1.8-7.7 × 10^9/L |
| Lymphocytes | 0.9 | 0.6 | 1.0-4.8 × 10^9/L |
| Hemoglobin | 10.2 | 9.6 | 13.5-17.5 g/dL |
| Platelets | 120 | 78 | 150-400 × 10^9/L |
| IgG | 680 | 350 | 700-1600 mg/dL |
| IgA (M-protein) | 2800 | 1200 | 70-400 mg/dL |
| Kappa FLC | 62.5 | 28.2 | 3.3-19.4 mg/L |
| Lambda FLC | 15.2 | 14.8 | 5.7-26.3 mg/L |
| K/L Ratio | 4.11 | 1.91 | 0.26-1.65 |
| β2-M | 4.2 | 3.8 | <2.7 mg/L |

**Electronically Signed**:  
Dr. M. Garcia (Hematology/Oncology)  
Dr. S. Williams (Infectious Disease)  
Dr. L. Chen (Neurology)  
Date: 2024-03-30