**Patient**: F.B. (DOB 1996-09-21)  
**MRN**: 243789  
**Admission**: 2025-03-15 | **Discharge**: 2025-03-28  
**Physician**: Dr. M. Weber (Hematology/Oncology)

**DISCHARGE DIAGNOSIS**

B-cell Precursor Acute Lymphoblastic Leukemia (B-ALL) receiving Blinatumomab

**ONCOLOGICAL DIAGNOSIS**

* **Primary**: B-cell Precursor Acute Lymphoblastic Leukemia (B-ALL)
* **Diagnosed**: 2024-11-10
* **Histology/Immunophenotype**:
  + Bone marrow: Hypercellular (90%) with 85% lymphoblasts
  + Flow cytometry: CD19+, CD20+, CD10+, CD34+, TdT+, CD22+, CD79a+, CD45 dim, CD38+, HLA-DR+
  + Negative for myeloid and T-cell markers
* **Cytogenetics**:
  + Karyotype: 46,XY[20]
  + FISH: Negative for BCR-ABL1, KMT2A(MLL), ETV6-RUNX1, TCF3-PBX1, iAMP21, hypo/hyperdiploidy
* **Molecular**:
  + IKZF1 deletion detected (poor prognostic marker)
  + JAK2, CRLF2, NOTCH1, FBXW7, and TP53 mutations negative
* **Risk Classification**:
  + GMALL: High Risk (elevated WBC at diagnosis: 56 × 10^9/L)
* **MRD Status**:
  + After Induction: 5 × 10^-3 (0.5%)
  + After Consolidation I: 2 × 10^-3 (0.2%)
  + Pre-blinatumomab: 15 × 10^-4 (0.15%)
* **CNS Status**:
  + CNS-1 (negative for blast cells)

**CURRENT TREATMENT**

**Regimen**: GMALL protocol, Blinatumomab continuous IV infusion

* Day 1-28: 28 μg/day (day 14 completed at discharge)
* Planned duration: 28-day continuous infusion via portable pump
* Cycle start: 2025-03-15
* Rationale: Blinatumomab selected due to persistent MRD positivity; CD19 expression confirmed on residual blasts by flow cytometry prior to initiation
* Administration: Normal saline used as carrier fluid with controlled-rate infusion pump

**Intrathecal chemotherapy**:

* LP with IT cytarabine (40 mg), methotrexate (12 mg) and dexamethasone (4 mg) on day 1
* CSF results post-IT therapy: No malignant cells, protein 25 mg/dL, glucose 62 mg/dL, 2 WBC/μL

**Premedication**:

* Dexamethasone 20 mg IV 1 hour prior to initiation
* Acetaminophen 1000 mg PO and diphenhydramine 50 mg IV

**TREATMENT HISTORY**

**GMALL Protocol**:

* Prephase (2024-11-15 to 2024-11-19)
* Induction Phase I (2024-11-20 to 2024-12-18)
* Induction Phase II (2024-12-21 to 2025-01-26)
  + Toxicities: Grade 4 neutropenia with febrile neutropenia, Grade 3 mucositis, Grade 2 hepatotoxicity, Grade 2 peripheral neuropathy
* Consolidation I (2025-02-10 to 2025-03-10)

**Response Assessment**:

* Complete Remission (CR) after Induction Phase II
* Persistent MRD positivity after Consolidation I
* CSF analyses remain negative
* Decision for blinatumomab followed by allo-HSCT from HLA-identical sister (tumor board 2025-03-05)

**COMORBIDITIES**

* Reactive Depression (2025-01-15, following ALL diagnosis)
* Asthma (mild, intermittent, well-controlled)
* Vitamin D Deficiency
* History of Appendectomy (2016)
* Chronic Insomnia

**HOSPITAL COURSE**

28-year-old male with high-risk Philadelphia-negative B-ALL in morphological CR but persistent MRD admitted for blinatumomab initiation.

Pre-treatment evaluations (CBC, CMP, coagulation studies, ECG) were within acceptable parameters. ECG showed normal sinus rhythm with QTc 435 ms. CSF analysis was negative for malignant cells.

Blinatumomab was initiated at 28 μg/day on 2025-03-15 after premedication. Patient experienced mild rigors and low-grade fever (38.2°C) approximately 6 hours after initiation, managed with antipyretics and resolved within 12 hours. No evidence of Cytokine Release Syndrome (CRS).

On day 8 (2025-03-22), patient developed mild headache and transient confusion (Grade 1 neurotoxicity) which resolved within 24 hours with dexamethasone 4 mg IV q6h for 48 hours, without requiring dose interruption. CTCAE grade 1 tremors were also noted but self-limited. Neurology consultant confirmed absence of long-tract signs and absence of meningeal involvement.

Throughout hospitalization, patient remained hemodynamically stable with adequate renal and hepatic function. Daily neurological assessments showed no persistent deficits. Serial laboratory monitoring revealed stable blood counts without significant cytopenias.

Patient received education regarding portable infusion pump for outpatient therapy continuation. Home health nursing arranged for pump maintenance and bag changes. Patient and family demonstrated competence in pump management and understanding potential complications.

Psychosocial support provided with psychology consultation and cognitive-behavioral therapy initiation for reactive depression. Sleep hygiene education and pharmacological management for insomnia were addressed.

At discharge, patient is clinically stable without active symptoms of infection, neurotoxicity, or CRS.

**DISCHARGE MEDICATIONS**

* Blinatumomab 28 μg/day continuous IV infusion via portable pump (continue until day 28, next bag change 2025-03-30)
* Acyclovir 400 mg PO BID
* Fluconazole 200 mg PO daily
* TMP-SMX 800/160 mg PO MWF
* Acetaminophen 1000 mg PO Q6H PRN
* Ondansetron 8 mg PO Q8H PRN
* Escitalopram 10 mg PO daily
* Salbutamol inhaler 2 puffs Q6H PRN
* Vitamin D3 2000 IU PO daily

**FOLLOW-UP PLAN**

**Hematology/Oncology**:

* Dr. M. Weber on 2025-03-31 (day 17)
* Twice weekly visits during blinatumomab therapy
* Bone marrow MRD assessment at cycle end (~2025-04-12)

**Laboratory Monitoring**:

* CBC, CMP, LDH, uric acid twice weekly (Monday/Thursday)

**Home Health Nursing**:

* Daily visits first week, then three times weekly
* Central line care, bag changes, assessment, vital signs

**Treatment Plan**:

* Complete current 28-day blinatumomab cycle (until 2025-04-12)
* Subsequent plan based on MRD status:
  + If MRD negative: proceed to allo-HSCT
  + If MRD positive: Inotuzumab ozogamicin, then allo-HSCT

**Supportive Care**:

* Psychology follow-up: 2025-04-02
* Dietitian consultation: 2025-04-02
* Social work support for financial counseling and HSCT preparation

**Patient Education**:

* Contact oncology immediately for:
  + Fever >38.0°C
  + Shaking chills, rigors
  + Neurological symptoms (confusion, disorientation, tremors, speech disorders)
  + Severe headache
  + Bleeding or unusual bruising
  + Infusion pump alarms or discontinuation

**KEY LAB VALUES**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Admission** | **Discharge** | **Reference** |
| WBC | 4.2 | 3.8 | 4.0-11.0 x10^9/L |
| ANC | 2.8 | 2.4 | 1.8-7.5 x10^9/L |
| Lymphocytes | 1.1 | 0.9 | 1.0-4.5 x10^9/L |
| Hemoglobin | 11.5 | 11.2 | 13.5-17.5 g/dL |
| Platelets | 156 | 142 | 150-400 x10^9/L |
| AST/ALT | 32/38 | 28/35 | 10-40/7-56 U/L |
| LDH | 210 | 195 | 125-220 U/L |

**Electronically Signed**:  
Dr. M. Weber (Hematology/Oncology)  
Date: 2025-03-28