**Patient:** Thomas Reynolds (DOB 1966-03-01)  
**Medical Record Number:** 683142  
**Date of Admission:** 2024-03-05  
**Date of Discharge:** 2024-03-22  
**Admitting Physician:** Dr. J. Wilson (Hematology/Oncology)  
**Consulting Physicians:** Dr. A. Gardner (Infectious Disease), Dr. M. Lawrence (Nephrology)

**Discharge Diagnosis: Acute Myeloid Leukemia (AML) with t(8;21), Favorable Risk, in Consolidation Cycle III**

**1. Detailed Oncological Diagnosis:**

Primary Diagnosis**:** Acute Myeloid Leukemia (AML), FAB M2 subtype with t(8;21)(q22;q22)/RUNX1-RUNX1T1.  
Date of Initial Diagnosis**:** October 8, 2023.

Histology**:**

* Bone marrow biopsy at diagnosis (October 2023) showed hypercellular marrow (90%) with 45% myeloblasts.
* Immunophenotype: Myeloblasts positive for CD34, CD117, CD13, CD33, HLA-DR, MPO.
* Cytochemistry: Positive myeloperoxidase, negative nonspecific esterase.

Molecular/Cytogenetic Profile:

* Karyotype: 46,XY,t(8;21)(q22;q22)[18]/46,XY[2]
* FISH: Positive for RUNX1-RUNX1T1 fusion in 85% of cells.
* Molecular: RUNX1-RUNX1T1 transcript detected (9.2% at diagnosis).
* NGS panel: Positive for KIT D816V mutation (VAF 15.3%), negative for FLT3-ITD, FLT3-TKD, NPM1, CEBPA, IDH1/2, and other recurrently mutated genes.

Risk Classification:

* ELN 2022 Risk Classification: Favorable Risk (based on t(8;21) despite KIT mutation).

**2. Current Oncological Treatment:**

Regimen**:** Consolidation Cycle III with High-Dose Cytarabine (HiDAC)

* Cytarabine (Ara-C) 3,000 mg/m² IV over 3 hours, every 12 hours on Days 1, 3, and 5 (total 6 doses).
* Treatment dates: March 6-10, 2024.

Premedications**:**

* Dexamethasone ophthalmic solution 0.1% eye drops, 2 drops in each eye QID, starting 1 day before cytarabine and continuing until 24 hours after last dose.
* Ondansetron 16 mg IV 30 minutes prior to each cytarabine dose.
* Dexamethasone 12 mg IV 30 minutes prior to each cytarabine dose.

**3. History of Oncological Treatment:**

Induction Therapy:

* 7+3+GO regimen (November 1-7, 2023):
  + Cytarabine 100 mg/m² continuous IV infusion for 7 days
  + Daunorubicin 60 mg/m² IV for 3 days
  + Gemtuzumab ozogamicin 3.0 mg/m² IV day 1, 4 and 7
* Complications: Febrile neutropenia (Day +6) requiring broad-spectrum antibiotics.
* Day 28 bone marrow biopsy: Complete remission (CR) with <1% blasts.
* MRD negative by flow cytometry, 3-log reduction in RUNX1-RUNX1T1 transcript.

Consolidation Therapy:

* Consolidation I (January 10-14, 2024): High-dose cytarabine (3 g/m² IV q12h on days 1, 3, 5).
  + Complications: Grade 2 cytarabine-related dermatitis, Grade 2 mucositis.
  + Post-Consolidation I MRD: RUNX1-RUNX1T1 transcript 0.01%.
* Consolidation II (February 12-16, 2024): High-dose cytarabine (3 g/m² IV q12h on days 1, 3, 5).
  + Complications: Grade 3 neutropenic fever (Day +9), Grade 2 mucositis.
  + Post-Consolidation II MRD: RUNX1-RUNX1T1 transcript <0.01% (undetectable).

**4. Comorbidities:**

* Essential Hypertension (diagnosed 2018, controlled with amlodipine).
* Dyslipidemia (diagnosed 2019, managed with atorvastatin).
* Prediabetes (HbA1c 6.2% prior to AML diagnosis).
* History of tobacco use (20 pack-years, quit in 2016).
* Obesity (BMI 32 kg/m²)
* Paroxysmal atrial fibrillation
* Allergies: Moxifloxacin (rash)

**5. Physical Exam at Admission:**

General: 58-year-old male, well-appearing, in no acute distress.

Vitals: BP 132/78 mmHg, HR 74 bpm, RR 16/min, Temp 36.7°C, SpO2 98% on room air, Weight 97 kg.

HEENT: Normocephalic, atraumatic. PERRL. EOMI. Oropharynx clear without lesions or exudates. Moist mucous membranes.

Cardiovascular: Regular rate and rhythm. S1, S2 normal. No murmurs, rubs, or gallops.

Respiratory: Clear to auscultation bilaterally. No wheezes, rales, or rhonchi.

Abdomen: Soft, non-tender, non-distended. Normal bowel sounds. No hepatosplenomegaly.

Extremities: No edema. Full ROM. 2+ pulses throughout.

Skin: No rashes, petechiae, or ecchymoses. Hickman catheter site on right chest wall without erythema, tenderness, or discharge.

Neurological: Alert and oriented x 3. CN II-XII intact. Motor strength 5/5 throughout. Sensation intact. No cerebellar abnormalities.

Lymph: No palpable lymphadenopathy.

**6. Epicrisis (Hospital Course Summary):**

Mr. Reynolds is a 58-year-old male with favorable risk AML (t(8;21)/RUNX1-RUNX1T1) in first complete remission, admitted for consolidation cycle III with high-dose cytarabine.

The patient received cytarabine 3 g/m² IV over 3 hours every 12 hours on Days 1, 3, and 5 (March 6, 8, and 10) for a total of 6 doses without dose modifications. Appropriate prophylaxis for cytarabine-related toxicities was implemented, including dexamethasone eye drops to prevent chemical conjunctivitis, antiemetics for nausea/vomiting, posaconazole prophylaxis during neutropenia and adequate hydration to maintain renal function and reduce risk of metabolic complications.

On Day +5 (March 11), the patient developed neutropenic fever (temperature 38.6°C) with an ANC of 0.1 x 10⁹/L. Blood and urine cultures were obtained, and empiric antibiotic therapy with piperacillin-tazobactam was initiated. Blood cultures grew methicillin-sensitive Staphylococcus epidermidis from the central line (considered a contaminant) and urine culture was negative. Infectious Disease was consulted and recommended continuing antibiotics through count recovery. The patient defervesced within 48 hours of antibiotic initiation.

On Day +7 (March 12), the patient developed grade 2 mucositis requiring increased analgesic support and IV hydration due to decreased oral intake. Oral care protocol was implemented with saline rinses and magic mouthwash.

Renal function displayed a transient decline with creatinine increasing from baseline 0.9 mg/dL to peak 1.4 mg/dL on Day +6 (March 11), likely due to pre-renal causes (decreased oral intake, cytarabine-related nausea/vomiting). Nephrology was consulted, and with IV fluid optimization, renal function improved (creatinine 1.1 mg/dL at discharge).

By Day +15 (March 20), the patient showed evidence of count recovery with ANC increasing to 0.5 x 10⁹/L and improvement in mucositis symptoms. He remained afebrile for >48 hours and was able to maintain adequate oral intake.

Overall, the patient tolerated his third consolidation cycle as expected with manageable toxicities. Consolidation IV (final cycle) is planned to begin in approximately 2 weeks, pending resolution of treatment-related toxicities.

**7. Medication at Discharge:**

* Acyclovir 400 mg PO BID (continue through count recovery)
* Amlodipine 5 mg PO daily (home medication)
* Atorvastatin 20 mg PO at bedtime (home medication)
* Apixaban 5mg BID
* Magic mouthwash (lidocaine/diphenhydramine/antacid) 5-10 mL swish and spit QID PRN mouth pain
* Ondansetron 8 mg PO Q8H PRN nausea
* Oxycodone 5 mg PO Q6H PRN moderate pain
* Acetaminophen 650 mg PO Q6H PRN mild pain/fever

**8. Further Procedure / Follow-up:**

Oncology Follow-up:

* Follow up with Dr. J. Wilson in 1 week (03/29/2024) for clinical assessment and CBC, including bone marrow biopsy to assess MRD status post-consolidation III.
* Twice weekly CBC, CMP until count recovery, then weekly thereafter.

Treatment Plan:

* Consolidation IV (final cycle) planned for early April 2024, pending count recovery and resolution of toxicities.
* Total of 4 cycles of high-dose cytarabine planned based on favorable risk profile.
* No allogeneic stem cell transplantation indicated in first remission given favorable risk disease with good molecular response.

Monitoring Plan:

* Post-treatment MRD monitoring with quantitative PCR for RUNX1-RUNX1T1 transcript every 3 months for year 1, then every 6 months for year 2-3.
* Bone marrow evaluation with molecular MRD assessment 1 month after completion of all consolidation therapy.

Patient Education:

* Instructed to monitor temperature twice daily and report fever ≥38.0°C immediately.
* Educated about neutropenic precautions, including avoiding crowds, proper hand hygiene, and food safety.
* Advised on continued oral care regimen for mucositis.
* Provided with emergency contact information for the oncology team.

**9. Lab Values (Excerpt):**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Admission (3/5/2024)** | **Nadir** | **Discharge (3/22/2024)** | **Units** | **Reference Range** |
| WBC | 4.2 | 0.3 (Day +7) | 2.3 | x10⁹/L | 4.0-11.0 |
| ANC | 2.8 | 0.0 (Day +6-8) | 1.7 | x10⁹/L | 2.0-7.0 |
| Hemoglobin | 11.5 | 8.2 (Day +9) | 8.5 | g/dL | 13.5-17.5 (M) |
| Platelets | 135 | 12 (Day +10) | 142 | x10⁹/L | 150-400 |
| Creatinine | 0.9 | - | 1.1 | mg/dL | 0.7-1.3 |
| BUN | 15 | - | 18 | mg/dL | 7-20 |
| Total Bilirubin | 0.8 | - | 0.9 | mg/dL | 0.3-1.2 |
| AST | 28 | - | 32 | U/L | 10-35 |
| ALT | 25 | - | 30 | U/L | 10-35 |
| LDH | 190 | - | 225 | U/L | 135-225 |
| Potassium | 4.1 | - | 3.9 | mEq/L | 3.5-5.0 |
| Magnesium | 2.0 | 1.6 (Day +6) | 1.8 | mg/dL | 1.7-2.2 |
| CRP | 1.5 | 35 (Day +5) | 8.5 | mg/L | < 5 |
| Peripheral Blasts | 0% | - | 1% | % | Negative |

Electronically Signed By:  
Dr. J. Wilson (Hematology/Oncology)  
Date/Time: 2024-03-22 14:30

Dr. A. Gardner (Infectious Disease)  
Date/Time: 2024-03-22 13:45

Dr. M. Lawrence (Nephrology)  
Date/Time: 2024-03-22 12:15