**Patient**: Walter Graham  
**MRN**: 782156  
**DOB**: 1952-02-14 (73 years)  
**Admission**: 2025-03-24 | **Discharge**: 2025-04-01  
**Physicians**: Dr. M. Reynolds (Hematology/Oncology), Dr. J. Nakamura (Infectious Disease), Dr. S. Patel (Nephrology)

**DISCHARGE DIAGNOSIS**

Myelodysplastic Syndrome with Excess Blasts-2 (MDS-EB2), Severe Pancytopenia, Neutropenic Fever

**DETAILED DIAGNOSIS**

* **Primary**: Myelodysplastic Syndrome with Excess Blasts-2 (MDS-EB2)
* **Diagnosed**: 2025-03-26
* **Laboratory Findings**:
  + Hemoglobin: 7.2 g/dL (Reference: 13.5-17.5)
  + White Blood Cell Count: 1.8 × 10^9/L (Reference: 4.0-11.0)
  + Absolute Neutrophil Count: 0.4 × 10^9/L (Reference: 1.8-7.5)
  + Platelets: 24 × 10^9/L (Reference: 150-400)
* **Peripheral Blood Smear**: Marked anisocytosis and poikilocytosis, occasional teardrops and elliptocytes, hypogranular neutrophils with pseudo-Pelger-Huët anomaly. Circulating myeloblasts (3%), severe thrombocytopenia with large platelets
* **Bone Marrow Biopsy** (2025-03-25):
  + Hypercellular marrow (80%) for age
  + Trilineage dysplasia (>10% in each lineage)
  + 12% myeloblasts by manual differential
  + Increased reticulin fibrosis (grade 1/3)
  + Ringed sideroblasts: 3% of erythroid precursors
* **Flow Cytometry**: 11% myeloblasts with expression of CD34, CD117, HLA-DR, partial CD13 and CD33
* **Cytogenetic Analysis**:
  + 46,XY,del(7q),+8[18]/46,XY[2]
  + Deletion of the long arm of chromosome 7, and trisomy 8
* **Molecular Studies**:
  + TP53 mutation (VAF 42%)
  + ASXL1 mutation (VAF 36%)
  + RUNX1 mutation (VAF 28%)
  + TET2 mutation (VAF 45%)
  + No mutations in SF3B1, JAK2, MPL, or CALR
* **Risk Stratification**:
  + IPSS: High risk (score 3.0)
  + IPSS-R: Very high risk (score 9.0)
  + IPSS-M: 2.80 (Very High)

**CURRENT TREATMENT**

**Initial Management**:

* Packed red blood cell transfusion: 2 units on admission, 2 units on 2025-03-28
* Platelet transfusion: 1 unit on admission, 1 unit on 2025-03-27, 1 unit on 2025-03-30
* Empiric antibiotics for neutropenic fever:
  + Piperacillin-tazobactam 4.5 g IV q8h
  + Vancomycin 1 g IV q12h (dose-adjusted for renal function)

**Treatment Plan for MDS**:

* Azacitidine 75 mg/m²/day subcutaneously for 7 days, every 28 days
* First cycle initiated on 2025-03-28
* Referral to transplant center for allogeneic hematopoietic stem cell transplantation evaluation

**Supportive Care**:

* Antimicrobial prophylaxis:
  + Levofloxacin 250 mg PO daily (when ANC <0.5 × 10^9/L)
  + Posaconazole 300 mg PO daily
  + Acyclovir 400 mg PO BID
  + Allopurinol 100 mg PO daily

**PREVIOUS TREATMENT HISTORY**

* No prior treatment for MDS (new diagnosis)
* Evaluated 3 months ago for fatigue with mild anemia (Hgb 11.2 g/dL) and thrombocytopenia (PLT 120 × 10^9/L)
* Previously attributed to vitamin deficiency and treated with multivitamin
* Progressive worsening of anemia despite supplementation

**COMORBIDITIES**

* Chronic kidney disease stage 3a (baseline eGFR 50 mL/min/1.73m²)
* Hypertension (controlled)
* Type 2 diabetes mellitus (HbA1c 7.1%)
* Coronary artery disease, status post LAD stenting (2020)
* Hyperlipidemia
* Benign prostatic hyperplasia
* Osteoarthritis of bilateral knees

**HOSPITAL COURSE**

73-year-old male presented with fatigue, fever (38.4°C), and severe pancytopenia. Received blood product support and empiric antibiotics for neutropenic fever. Blood cultures were negative, but urine culture grew E. coli sensitive to administered antibiotics.

Comprehensive workup with bone marrow biopsy revealed MDS-EB2 with 12% blasts, complex cytogenetics, and multiple high-risk molecular mutations. Treatment with azacitidine was initiated on 2025-03-28 with minimal side effects (mild injection site erythema, mild nausea).

Hospital course was complicated by acute kidney injury (peak creatinine 1.9 mg/dL) due to pre-renal causes and medication effects. Renal function improved with hydration and medication adjustments (discharge creatinine 1.6 mg/dL).

Patient received education regarding diagnosis, treatment plan, and home care instructions. Discussions about allogeneic stem cell transplantation were initiated with referral to transplant center for evaluation.

**DISCHARGE MEDICATIONS**

* Azacitidine 75 mg/m²/day subcutaneously (2 more days to complete cycle 1)
* Levofloxacin 250 mg PO daily (while ANC <0.5 × 10^9/L)
* Posaconazole 300 mg PO daily
* Acyclovir 400 mg PO BID
* Allopurinol 100 mg PO daily
* Pantoprazole 40 mg PO daily
* Ondansetron 8 mg PO TID PRN nausea
* Lisinopril 10 mg PO daily
* Metformin 500 mg PO BID
* Rosuvastatin 20 mg PO daily
* Aspirin 81 mg PO daily (pause when platelets < 50 G/l)
* Potassium chloride 40 mEq PO TID
* Tamsulosin 0.4 mg PO daily
* Acetaminophen 650 mg PO Q6H PRN pain or fever (max 3 g/day)

**FOLLOW-UP PLAN**

**Hematology/Oncology**:

* Dr. M. Reynolds next two days (2025-04-02 and -03) for azacitidine days 6-7
* Follow-up one week after completion (2025-04-10)
* Second cycle scheduled to begin approximately 2025-04-25 (pending count recovery)
* Bone marrow biopsy after 4 cycles to assess response

**Laboratory Monitoring**:

* CBC with differential, CMP twice weekly until count recovery
* Weekly assessment of ferritin, LDH

**Transplant Evaluation**:

* University Medical Center Transplant Program on 2025-04-15
* HLA typing completed, results pending
* Siblings to be contacted for potential donor evaluation (2 siblings)

**Blood Product Support**:

* Transfuse PRBC for hemoglobin <7 g/dL or symptomatic anemia
* Transfuse platelets for count <10 × 10^9/L or <20 × 10^9/L with bleeding

**Infectious Disease**:

* Dr. J. Nakamura in 1 week (2025-04-08)
* Monitoring for opportunistic infections during neutropenia

**Patient Education**:

* Recognition of fever and infection (notify if temperature >38.0°C)
* Bleeding precautions
* Avoidance of crowds and sick contacts
* Importance of antimicrobial prophylaxis adherence
* Neutropenic diet guidance

**KEY LAB VALUES**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Admission** | **Discharge** | **Reference** |
| WBC | 1.8 | 1.7 | 4.0-11.0 ×10^9/L |
| ANC | 0.4 | 0.4 | 1.8-7.5 ×10^9/L |
| Hemoglobin | 7.2 | 8.6 | 13.5-17.5 g/dL |
| Platelets | 24 | 56 | 150-400 ×10^9/L |
| Creatinine | 1.7 | 1.6 | 0.7-1.2 mg/dL |
| eGFR | 39 | 42 | >60 mL/min/1.73m² |
| Potassium | 3.5 | 5.2 | 3.5-5.0 mmol/L |
| LDH | 380 | 345 | 135-225 U/L |
| Ferritin | 768 | 792 | 30-400 ng/mL |
| CRP | 3.8 | 1.6 | <0.5 mg/dL |

**Electronically Signed**:  
Dr. M. Reynolds (Hematology/Oncology)  
Dr. J. Nakamura (Infectious Disease)  
Dr. S. Patel (Nephrology)  
Date: 2025-04-01