**Patient**: A.T. (DOB 1971-02-01)  
**MRN**: 854721  
**Admission**: 2025-03-18 | **Discharge**: 2025-03-24  
**Physicians**: Dr. M. Jacobs (Hematology/Oncology), Dr. J. Rodriguez (Cardiology)

**DISCHARGE DIAGNOSIS**

Newly Diagnosed Chronic Myeloid Leukemia

**ONCOLOGICAL DIAGNOSIS**

* **Primary**: Chronic Myelogenous Leukemia (CML)
* **Diagnosed**: March 2025
* **Histology**:
  + Bone marrow (3/19/25): Hypercellular (95%) with marked myeloid hyperplasia. M:E ratio 20:1. Blast percentage 3%. Reticulin fibrosis grade 1/4.
  + IHC: CD34+ blasts <5%, MPO+ myeloid precursors increased, CD61+ megakaryocytes increased with clustering
  + Flow cytometry: Myeloid predominance with left shift, blasts 2.8%
* **Molecular Studies**:
  + RT-PCR: BCR-ABL1 positive, BCR-ABL1/ABL1 ratio (IS) 78.6%
  + Transcript type: e14a2 (b3a2) major breakpoint
  + Cytogenetics: 46,XY,t(9;22)(q34;q11.2) in 20/20 metaphases
  + FISH: BCR-ABL1 fusion positive in 95% of nuclei
  + NGS: Negative for additional mutations, including ABL1 kinase domain mutations
* **Risk Stratification**:
  + Sokal Score: 0.9 (Intermediate risk) [Age: 54 years, Spleen: 5 cm below costal margin, Platelets: 480 × 10^9/L, Peripheral blood blasts: 1%]
  + EUTOS Score: 89 (High risk) [Spleen: 5 cm below costal margin, Basophils: 7%]
  + ELTS Score: 1.39 (Low risk) [Age: 54 years, Spleen: 5 cm below costal margin, Peripheral blood blasts: 1%, Platelets: 480 × 10^9/L]
* **Laboratory Findings**:
  + WBC: 186.4 × 10^9/L
  + Hemoglobin: 11.2 g/dL
  + Platelets: 480 × 10^9/L
  + Differential: Neutrophils 58%, Myelocytes 12%, Metamyelocytes 8%, Promyelocytes 4%, Blasts 1%, Basophils 7%, Eosinophils 5%, Lymphocytes 5%
  + LDH: 780 U/L, Uric acid: 8.2 mg/dL
* **Imaging**:
  + Abdominal US: Splenomegaly (17 cm)
  + CXR: No significant abnormalities

**CURRENT TREATMENT**

**Tyrosine Kinase Inhibitor**:

* Dasatinib (Sprycel®) 100 mg PO daily (initiated 3/21/25)

**Cytoreduction/Tumor Lysis Prevention**:

* Hydroxyurea 2000 mg PO daily × 3 days (3/19-21), then 1000 mg on 3/22, discontinued 3/23
* Allopurinol 300 mg PO daily (initiated 3/19, to continue for 2 weeks)
* IV normal saline at 150 mL/hour for 48 hours

**COMORBIDITIES**

* Moderate persistent asthma
* Essential hypertension
* Mild depression (on SSRI)
* History of nephrolithiasis (2018)
* Seasonal allergic rhinitis
* Allergies: Penicillin (urticaria), Iodinated contrast (rash)

**HOSPITAL COURSE**

54-year-old male presented with fatigue, early satiety, left upper quadrant discomfort, night sweats, and markedly elevated WBC (186.4 × 10^9/L) found during routine physical examination. Admitted for expedited evaluation of suspected hematologic malignancy.

Bone marrow biopsy confirmed CML in chronic phase with characteristic t(9;22) translocation and BCR-ABL1 fusion transcript. Risk stratification showed intermediate risk by Sokal, high risk by EUTOS score and low risk ELTS scores.

Cytoreduction with hydroxyurea was initiated due to marked leukocytosis, along with hydration and allopurinol for tumor lysis prevention. Standard-dose dasatinib (100 mg daily) was started as first-line TKI therapy on day 3. The choice of dasatinib over imatinib was based on patient's age, intermediate Sokal risk, and desire for deeper and faster molecular response.

Patient tolerated therapy well with mild muscle cramps and headache responding to symptomatic management. WBC decreased to 24.6 × 10^9/L by day 5, allowing discontinuation of hydroxyurea. Splenomegaly decreased to 4 cm below costal margin by discharge, with improvement in early satiety and abdominal discomfort.

Cardiac evaluation prior to TKI therapy showed normal QTc interval (428 msec) and left ventricular function (LVEF 60%). Baseline pulmonary function tests were within normal limits (FEV1 85% predicted, DLCO 88% predicted). These baseline values are important for monitoring potential dasatinib-related cardiopulmonary toxicities, including pleural effusion and pulmonary arterial hypertension.

Patient received comprehensive education regarding CML, treatment expectations, side effects, and importance of medication adherence. Clinically stable at discharge with improving blood counts.

**DISCHARGE MEDICATIONS**

**New Medications**:

* Dasatinib (Sprycel®) 100 mg PO daily
* Famotidine 20 mg PO daily (2h after or 10h before dasatinib)
* Allopurinol 300 mg PO daily (continue for 2 weeks total)
* Acetaminophen 650 mg PO Q6H PRN for headache/muscle cramps
* Loperamide 2 mg PO PRN for diarrhea (max 8 mg daily)

**Chronic Medications**:

* Lisinopril 10 mg PO daily
* Fluticasone/salmeterol 250/50 mcg inhaler, 1 puff BID
* Escitalopram 10 mg PO daily
* Loratadine 10 mg PO daily PRN
* Albuterol inhaler 2 puffs Q4H PRN

**FOLLOW-UP PLAN**

**Hematology/Oncology**:

* Dr. M. Jacobs in 1 week (3/31/25)
* CBC with differential twice weekly for 2 weeks, then weekly until stable
* CMP weekly for 1 month
* BCR-ABL1 quantitative PCR at 3 months to assess for Early Molecular Response (target: BCR-ABL1 ≤10% IS)
* Subsequently, BCR-ABL1 PCR every 3 months for first year, then every 3-6 months if responding

**Recommendations**:

* Report new symptoms, particularly SOB, chest pain, or bleeding
* Monitor for fluid retention; report sudden weight gain, edema, or dyspnea
* Avoid PPIs; take H2RA only in specified time window
* Avoid strong CYP3A4 inhibitors/inducers, grapefruit juice, St. John's wort
* Use effective contraception during treatment
* TKI adherence is critical for optimal response

**Patient Education Provided**:

* CML disease process and natural history
* Treatment goals and monitoring milestones
* Medication adherence importance
* Side effect management
* Emergency symptoms
* Support resources

**KEY LAB VALUES**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Admission** | **Discharge** | **Reference** |
| WBC | 186.4 | 24.6 | 4.0-11.0 × 10^9/L |
| Hemoglobin | 11.2 | 11.5 | 13.5-17.5 g/dL |
| Platelets | 480 | 420 | 150-400 × 10^9/L |
| Neutrophils | 58 | 62 | 40-70% |
| Lymphocytes | 5 | 15 | 20-40% |
| Myelocytes | 12 | 5 | 0% |
| Metamyelocytes | 8 | 3 | 0% |
| Blasts | 1 | 0 | 0% |
| Basophils | 7 | 5 | 0-2% |
| LDH | 780 | 520 | 135-225 U/L |
| Uric Acid | 8.2 | 5.6 | 3.5-7.2 mg/dL |

**Electronically Signed**:  
Dr. M. Jacobs (Hematology/Oncology)  
Dr. J. Rodriguez (Cardiology)  
Date: 2025-03-24