

## Suggested Admission Orders for Patients Presenting with Hyperleukocytosis and Leukostasis

Hyperleukocytosis is seen in the setting of acute leukemia and is usually defined by a WBC > 100 x 10<sup>9</sup>/L. Leukostasis refers to the end-organ damage and tissue hypoxia that occur as a consequence of the high WBC count and most commonly manifests as respiratory symptoms or acute neurologic symptoms. **Hyperleukocytosis and leukostasis are medical emergencies requiring immediate initiation of cytoreductive therapy.** They can also be complicated by disseminated intravascular coagulation (DIC) and tumor lysis syndrome (TLS).

### Bloodwork:

- Q6H: Electrolytes (Na, K, Cl, Ca, Mg, PO<sub>4</sub>), creatinine, uric acid
- Q6H: CBC, INR, fibrinogen
- Blood cultures, urine cultures
- Send uric acid sample on ice in patients who have received rasburicase

### Cytoreductive Therapy:

- Hydroxyurea \_\_\_\_\_ mg \_\_\_\_\_ times per day
- Additional chemotherapy as per Oncology orders

\* Leukapheresis may also be used to lower the WBC in some centers. However, there is no proven mortality benefit\*

### IV Fluids:

- Ringers Lactate at \_\_\_\_\_ mL/hour
- Normal saline at \_\_\_\_\_ mL/hour
- Avoid diuretics unless clinically significant volume overload is present (i.e., pulmonary edema requiring increased oxygen)

### Transfusion Thresholds:

- Maintain platelets greater than the following target:
  - Not actively bleeding: 20 x 10<sup>9</sup>/L
  - Actively bleeding: 50 x 10<sup>9</sup>/L
- Maintain fibrinogen greater than 1-1.5 g/dL
- Maintain INR less than 2.0
- Avoid PRBC transfusions unless the patient develops symptomatic anemia**

### Tumor Lysis Prophylaxis:

- Rasburicase 4.5g IV x 1 with daily reassessment (after G6PD screening)

**Imaging:**

- Chest x-ray: All patients
- CT brain: All patients with neurologic symptoms, including altered level of consciousness
- CT chest: Consider if respiratory symptoms present

**Additional Considerations:**

- Consider empiric antibiotics for possible superimposed infection**
- Discuss dexamethasone administration with the Oncology team
  - This may be added for respiratory failure, particularly in acute myelomonocytic leukemia (AMML)
- Sequential compression device (SCD) for venous thromboembolism prophylaxis.