Hyperleukocytosis/Leukapheresis in **Patients with Leukemia**

Associated Power Plans: Hem/Onc Leukemia/Lymphoma (Suspected),



Evidence Based Practice

Tumor Lysis Pathway

Symptoms of Leukostasis Affected Signs & Symptoms System · Headache, dizziness, vision disturbance Central Ataxia Nervous · Confusion, somnolence/coma System Papilledema, retinal hemorrhage, retinal vein distension Cranial nerve palsies Tachycardia/bradycardia & hypotension · Peripheral vascular occlusion Cardiovascular Pulmonary hypertension Myocardial infarction, arrhythmias Tachypnea, dyspnea at rest Hypoxia/hypoxemia Respiratory Respiratory failure • Pulmonary leukostasis syndrome: • Bilateral infiltrates, tachypnea, hypoxia Renal/ · Oliguria, anuria, acute kidney injury Metabolic • Tumor lysis syndrome (link to pathway) Priapism Other • Disseminated intravascular coagulation **High Risk for Development of** Symptoms of Leukostasis • Leukemia NOS with WBC > 200K/µL • Pts with presumed acute myelogenous leukemia (AML)

· Start definitive chemotherapy regimen

Consider leukapheresis, particularly if WBC ≥

determined by Hem/Onc

400K/µL

- Pt presents with hyperleukocytosis (WBC \geq 100K/ μ L)
- Evaluate pt's degree of tumor lysis and coagulopathy
- Order Labs refer to Hem/Onc Leukemia/Lymphoma (Suspected) power

Does pt have

symptoms of

leukostasis **OR** is pt at high risk

for developing symptoms?

Yes

Transfer to

PICU

What is the

phenotype?

- Review peripheral smear
- Obtain peripheral flow testing
- Start prompt supportive care

Inclusion criteria:

- Newly diagnosed or relapsed acute leukemia AND
- WBC ≥ 100K/µL

Exclusion criteria:

· Known diagnosis or high suspicion of acute promyelocytic leukemia (APML) or myelogenous leukemia (CML) in chronic phase

Initial Labs:

- CBC with differential
- Peripheral smear
- BMP, phosphorus level, LFTs
- · Serum uric acid, LDH
- PT/INR, aPTT, Fibrinogen, T&S

Supportive care:

• Refer to <u>Tumor Lysis Syndrome</u> pathway and power plans for fluid and additional lab orders

Continue surveillance for leukostasis symptoms, supportive care, and diagnostic work-up to start definitive chemotherapy (as directed by Hem/Onc)

- Start definitive chemotherapy regimen determined by Hem/Onc
- Consider leukapheresis (excluding APML or CML), particularly if WBC ≥ 200K/μL and/or monocytic
- Continue leukapheresis supportive care indicated? Yes

Myeloid-

No

- Contact Apheresis doctor ASAP and place "Consult for Apheresis" in Cerner
- Plan for Hyperleukocytosis Huddle:
 - PICU will initiate the Hyperleukocytosis Huddle and notify participants via pager of huddle time
 - Participants: PICU, Hem/Onc and Apheresis (In person preferred, if not possible, then by phone
 - Discuss likely phenotype to inform apheresis treatment needs/implications
 - Discuss venous access options and timing of procedure(s)

Lymphoid/

Unknown

- Refer to CM "Apheresis Operations and Ordering Standards" policy for venous access decision-making
- Venous access is obtained and verified

Abbreviations:

NOS = No other symptoms T&S = type and screen

Leukapheresis Initiated

Set-up for leukapheresis by the Apheresis RN may take 1-2 hours from time of their arrival

QR code for mobile view

Contact: EvidenceBasedPractice @cmh.edu

<u>Link to synopsis and references</u>