Tumor lysis syndrome: Intermediate/High Risk

Associated Power Plan: EDP Tumor Lysis Syndrome; Tumor Lysis

Children's Mercy KANSAS CITY | Evidence Based Practice

Pts with Intermediate Risk or High Risk for development of TLS

TLS Stratification

Hydrate pt:
- Consider normal saline bolus (20 cc/kg), then start:
  - 1.5 to 2x maintenance fluids **WITHOUT** potassium to maintain UOP of 3 to 5 mL/kg/hr
- Hydration considerations

Lab monitoring for pts:
- BMP, Phos, Serum uric acid (SUA) **every 12 hours for intermediate risk or every 6-8 hours for high risk**
- Daily: LDH

Refer to powerplans (*EDP Tumor Lysis Syndrome* or *Tumor Lysis* [Inpatient]) for meds and labs

Is the pt high risk for developing TLS with a **SUA ≥ 8 mg/dL AND ONE** of the following:
- WBC > 50,000/µL
- Burkitt or other non-Hodgkin lymphoma with high tumor burden
- Elevated or rising Serum Creatinine (SCr)
- Elevated LDH (>2x upper limit nl)
- Unable to tolerate oral allopurinol**

Yes

Administer:
- Rasburicase STAT **AND** start allopurinol PO*/**

No

- Administer oral allopurinol x1, then continue scheduled BID-TID
- Continue hyper-hydration

Does the pt have persistent SUA ≥ 8 mg/dL despite 12 hours of hyper-hydration and allopurinol ?

Yes

No

Refractory to treatment or severe electrolyte disturbances*?

Yes → Transfer to PICU and consider Nephrology consult for dialysis

No

Continue medical management

Oral Allopurinol (PO/NG/PG*) dosing divided BID-TID:
- Children <6 yrs: 150 mg PO daily
- Children 6-10 yrs: 300 mg PO daily
- Children >10 yrs: 600-800 mg PO daily
- Weight based dosing: 10mg/kg/day PO (max 800mg/day)

***IV dosing not recommended** – does not provide benefit over PO/NG/PG and is cost prohibitive

**If pt NPO for procedure, determine if pt can take PO dosing with sips of water

Rasburicase dosing and administration:

Weight	Dose
<10 kg^	1.5 mg
10-20 kg	3 mg
20-30 kg	4.5 mg
>30 kg	6 mg

^ Dosing in infants is not well established although case reports suggest safety and efficacy of standard dosing in this population. Recommend 0.15 mg/kg/dose without rounding for this pt population.

- A single dose of 0.15 mg/kg rounded to the nearest 1.5 mg (vial size)
- Maximum dose: 6 mg
  - A single dose of 7.5 mg may be considered for pts > 100 kg
- May repeat dose no sooner than 12 hours if inadequate response or if metabolic abnormalities recur
- Alkalinization of the urine is not recommended with the use of rasburicase
- **For 96 hrs after rasburicase administration** the "uric acid post rasburicase" order should be used
  - Blood must be collected into pre-chilled tubes containing heparin (red gel or mint green), placed on ice, and taken to the lab
- **Additional considerations**

High tumor burden:
- Elevated LDH >2X upper limit of normal for age
- Elevated WBC typically > 25,000k in hematologic malignancy
- Significant lymphadenopathy on exam or imaging (>10cm or widely metastatic disease in lymphoma)

Acronyms/Abbreviations:
BL = Burkitt Lymphoma/Leukemia
HPI = History of Present Illness
LLy = Lymphoblastic Lymphoma
SUA = Serum uric acid
TLS = Tumor Lysis Syndrome
UOP = Urine output

QR code for mobile view

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For additional information, link to synopsis

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