

PROTOCOL FOR: Tumor Lysis Syndrome: Care of the Oncology Patient with

SUPPORTIVE DATA: Tumor Lysis Syndrome (TLS) is a metabolic syndrome that can occur in an oncology patient with a rapidly growing tumor or a large tumor mass following chemotherapy. The chemotherapy causes the malignant cells to rupture, releasing their intracellular contents into the circulation. Consequently, there are increased levels of potassium, uric acid, and phosphorous and decreased levels of calcium in the blood.

TLS, an oncologic emergency, typically occurs 1-5 days after chemotherapy administration. It can be a very serious and potentially life-threatening complication associated with antineoplastic therapy. Patients with TLS are at high risk for cardiac arrhythmias, acute renal failure and seizures due to the electrolyte, metabolic and fluid imbalances caused by TLS.

DESIRED PATIENT

OUTCOMES:

1. Patient will demonstrate absence of or resolution of TLS evidenced by normal blood values for: Potassium, Uric acid, Phosphorous, Calcium.

ASSESSMENTS: Signs and symptoms of TLS include:

1. Hyperkalemia
 - a. Nausea and vomiting
 - b. Diarrhea
 - c. Weakness, Paresthesias, muscle cramps
 - d. Restlessness/irritability
 - e. EKG changes
2. Hyperuricemia
 - a. Nausea and vomiting
 - b. Diarrhea
 - c. Lethargy
 - d. Edema
 - e. Flank pain
 - f. Hematuria
 - g. Azotemia
 - h. Oliguria
3. Hyperphosphatemia
 - a. Oliguria/Anuria
 - b. Renal insufficiency
4. Hypocalcemia
 - a. Muscle twitching, Carpo-pedal spasm, Tetany

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- b. Paresthesia
- c. Laryngospasm
- d. Seizures
- e. EKG changes

GENERAL

NURSING CARE:

The treatment of TLS includes:

1. Vigorous hydration to maintain renal function
 - a. Administer IV hydration
 - b. Monitor and record urine output q 4 hours and PRN for:
2. Diuretic administration to promote excretion of potassium and uric acid.
3. Prophylactic alkalinization of urine to maintain urine pH \geq 7 as ordered.
4. Allopurinol administration to decrease levels of uric acid and to prevent acute renal failure.
5. Electrolyte replacement
 - a. Monitor lab studies
 - b. Replace electrolytes as prescribed by the physician.
 - c. Administer phosphate-binding antacids (Amphogel or basogel) to reverse hyperphosphatemia as prescribed by the physician.
6. For severe TLS, temporary hemodialysis to correct acute renal failure.
7. Cardiac status
 - a. Monitor and record vital signs q 4 hours and PRN as clinically indicated.
 - b. Place patient on cardiac monitor as clinically indicated.
8. Neurological status
 - a. Assess patient for muscle twitching and seizure activity.
 - b. Initiate seizure precautions especially for high risk patients (Please refer to Supportive Data, Risk Factors) and patients exhibiting muscle twitching or seizure activity.

DOCUMENTATION:

1. Document assessment findings and interventions on the unit flowsheets, MAR and Infusion Record.
2. Document patient response to care in the Progress Notes using focus format.

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APPROVAL: Nursing Standards Committee

EFFECTIVE DATE: 6/92

REVISION DATES: 9/96, 3/99, 10/00, 3/02