

PROTOCOL FOR: Interleukin-2 (rIL-2): Administration of Continuous Infusion

- SUPPORTIVE DATA:
1. Recombinant Interleukin-2 (IL-2) is a pleiotropic lymphokine found to be effective in treating patients with malignant melanoma and metastatic renal carcinoma. IL-2 is considered a biological response modifier, as it stimulates specific subsets of lymphocytes in the immune system.
 2. IL-2 therapy is physically and emotionally taxing with mild to severe systemic toxicity. Most patients will develop fever with chills and rigors, other flu-like symptoms including malaise, arthralgia and myalgia. IL-2 has been associated with capillary leak syndrome (CLS). This syndrome is characterized by an increase in vascular permeability that causes extravasation of fluid into the tissue spaces and decreased vascular resistance. CLS causes hypotension, renal insufficiency, respiratory distress and peripheral edema. Pulmonary congestion (dyspnea, cough, tachypnea, rales, hypoxia) and pleural effusion may develop related to CLS in the lungs. Management of hypotension must be anticipated and treatment regimen established. Frequently, patients may require vasopressor support.

DESIRED

- PATIENT OUTCOMES:
1. Patient will maintain maximum level of comfort as demonstrated by absence of, or minimal:
 - a. Fever, chills, rigors, arthralgia and myalgia.
 2. Patient will remain hemodynamically stable.
 3. Patient will maintain normal renal function.

CLINICAL
ASSESSMENT

- AND CARE:
1. Established multi-lumen central line essential (PICC, Hickman, or triple lumen preferred).
 - a. Maintain central line per Protocol.
 2. Pre-chemo Administration Preparation
 - a. Administer IV hydration as prescribed.
 - b. Pre-medicate with anti-emetic and anti-pyretic as ordered.
 - c. Emergency medications available at bedside:
 - 1) Benadryl 50 mg IV
 - 2) Hydrocortisone 100 mg IV
 - 3) Epinephrine (1:10,000)
 - 4) Dopamine readily available
 - 5) NS IV Bolus

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- d. Monitor equipment at bedside:
 - 1) Pulse oximeter
 - 2) Non-invasive BP monitor
 - 3) Cardiac monitor
 - 4) O₂ set-up (nasal cannula and non-rebreather)
 - 5) Suction apparatus with tubing suction catheter attached
 - 6) Calculate Dopamine 2mg/kg/min=cc/hr

3. Administer chemotherapy per protocol.

- a. IL-2 infused over 24 hours.
- b. Do not interrupt infusion for showers.
- c. Notify MD of change in BP (systemic < 90) that may require stopping IL-2, fluid bolus and/or vasopressor administration.

4. Systemic Toxicity/Nursing Intervention

- a. Flu-like symptoms
 - 1) Pre-treatment with acetaminophen per order
 - 2) Toradol q6 hours for fever per order
 - 3) Demerol for rigors per order
- b. Cardiovascular toxicities - Hypotension
 - 1) Monitor BP q2 hours if stable, may require more frequent BP monitoring if able.
 - 2) Notify MD if systolic BP < 90mm Hg.
 - 3) Hold IL-2 per MD order.
 - 4) Administer IV fluid or colloid solution as ordered.
 - 5) If fluid challenges do not reverse hypotension, MD may order vasopressor.
 - Renal dose Dopamine 2 mcg/kg/min is acceptable on Oncology 6 if hypotension persists
 - If patient requires a higher Dopamine dose and/or additional vasopressors, patient must be transferred to ICU.
- c. Pulmonary Toxicity (related to capillary leak syndrome - resulting in a gradual accumulation of fluid in the lungs).
 - 1) Monitor pulse oximetry q 2-4 hours.
 - 2) Lung assessment q 4 hours.
 - 3) Monitor intake and output.
 - 4) Monitor for complaints of dyspnea, tachypnea and cough.
 - 5) Maintain oxygen saturation >90%.
 - 6) Monitor for symptoms of pleural effusion.
 - 7) Assess for decreased breath sounds, dyspnea
 - 8) CXR as ordered
 - 9) Diuretics per order

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10) Daily weights

d. Dermatologic Toxicities

- 1) Assess for development of erythematous rash
- 2) Administer antihistamines, topical lotion per MD order

e. Gastrointestinal Toxicities (nausea, vomiting, diarrhea)

- 1) Administer anti-emetics per order
- 2) Maintain I & O
- 3) IV fluids per order
- 4) Monitor fluid and electrolyte balance

f. Renal Toxicities (high dose IL-2 can cause oliguria and azotemia)

- 1) Maintain I & O
- 2) Monitor serum creatinine and BUN
- 3) Administer renal dose Dopamine per MD order
- 4) Administer diuretic per MD order

- DOCUMENTATION:
1. Document assessment findings and nursing interventions onto Oncology 6 Flowsheet, MAR and Infusion Record.
 2. Document patient response to care in the Patient Progress Notes using Focus Note format per Department of Nursing Standards.

APPROVAL: Nursing Standard Committee

EFFECTIVE DATE: 3/99

REVISION DATES: 3/02

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VASOPRESSIN

For a 1 unit/per ml concentration:

Add 5 vials (20 units/ml) to 100 ml NS

Starting Dose = 0.02 units/min = 1.2 cc per hour

0.04 units/min = 2.4 cc per hour

0.06 units/min = 3.6 cc per hour

0.08 units/min = 4.8 cc per hour

Maximum dose = 0.1 units/min = 6 cc per hour