Rabbit Antithymocyte Globulin (rATG) Infusion (Cardiac Wards)

Site Applicability

St. Paul's Hospital 5A Medical Cardiology unit and CICU

Practice Level

Specialized:

Within the scope of every registered nurse oriented to and working in the Heart Centre in-patient acute care units

Requirements

- Follow the PDTM instructions for infusion.
- Due to the risk of anaphylaxis, infusions should be started during dayshift hours (0700 to 1900).
- Avoid simultaneous administration of blood or blood derivatives.
- Do not mix with other medications in the same line

Need to Know

Antithymocyte globulin (Rabbit), (rATG), is used for induction of immunosuppression post-transplant in patients with high immunologic risk. It is also used to treat acute T cell mediated rejection post-transplant. Rabbit ATG is made by injecting human lymphocytes (as an antigen) into rabbits. The purified immunoglobulin fraction containing the relevant antithymocyte antibodies is used as intravenous injection.

Infusion-associated reactions, including oxygen desaturation, may occur during or following administration as early as the first or second dose in a single course of therapy. Premedication with antipyretics, antihistamines, and/or corticosteroids, as well as a slower infusion rate may decrease both the incidence and severity of these adverse reactions. Rapid infusion rates are associated with severe cytokine release syndrome. This syndrome, characterized by fever and multiple organ dysfunction, occurs when the immune system over responds to immunotherapy.

While anaphylactic reactions to rATG are considered rare, nurses should remain vigilant. To treat anaphylaxis with epinephrine without a prescriber order, nurses must follow the established decision support tool Anaphylaxis: Initial Emergency Treatment (Adult and Pediatric), and complete the required mandatory education on LearningHub.

The medical team will monitor complete blood count and differential (CBC plus differential) counts daily during therapy and adjust the dose of rATG accordingly.

Protocol

Assessment

Signs and symptoms of an adverse reaction include generalized rash, tachycardia, dyspnea, chills, fever, back pain, chest pain, hypertension, hypotension, and anaphylaxis.

For Doses 1 to 3: Monitoring on the cardiology unit

Monitor VS and assess for signs and symptoms of adverse reactions: Q15 minutes for the first 2 hours

- Q30 minutes for the third and fourth hour,
- Q1H until completion of infusion
- Q4H X 20 hours post infusion (or unit routine, whichever is more frequent)

For subsequent doses on the cardiology unit: (If no reaction after a minimum of three doses)

- The infusion can run over less time, refer to the PDTM monograph.
- Monitoring of VS and for signs and symptoms of reactions can be reduced to:
    - Q15 minutes for the first hour
    - Q30 minutes for the second hour
    - Q1H until completion of infusion
    - Unit routine (minimum Q8H) thereafter

Group vital signs with other care activities at night to preserve sleep/rest. Do not wake the patient solely for vital signs after the fourth dose. Monitor the patient while sleeping per unit routine, using observation to note any scratching, redness, or change in breathing patterns.

Interventions

In the event of anaphylaxis (e.g. rash, shortness of breath, hypotension), stop the infusion immediately, notify physician and follow Anaphylaxis: Initial Emergency Management (Adult and Pediatric).

For mild symptoms (e.g. chills, fever), slow the rate of infusion and notify the physician.

Documentation

Document in the electronic health record, including: patient assessment, medication administration on the MAR, and intake and output.

Document signs and symptoms of reaction in iView and complete a free text note with the title, “rATG Reaction Signs and Symptoms”

Patient and Family Education

Instruct patient to report signs and symptoms of an infusion reaction.

Adult patient education handout is available on LexiComp.

Related Documents

1. BD-00-12-40091 - Anaphylaxis: Initial Emergency Treatment (Adult and Pediatric).
2. B-00-13-10096 – Physical Assessment: Patients on Cardiac or Cardiac Surgery Inpatient Units

References

1. Sanofi-Aventis Canada. (2016) Thymoglobulin Product Monograph Retrieved December 15, 2021 from: http://products.sanofi.ca/en/Thymoglobulin.pdf
2. Lexicomp Online® Antithymocyte Globulin (Rabbit), Hudson, Ohio: Lexi-Comp, Inc. Retrieved December 15, 2021 from https://online.lexi.com
3. Parental Drug Therapy Manual Monograph Antithymocyte Globulin (Rabbit) Retrieved December 15 2021 from: http://pdtm.vch.ca
4. Porter, D. L., Maloney, D. G. (March 2022). Cytokine release syndrome (CRS). Retrieved March 8, 2022 from uptodate.com

Persons/Groups Consulted

CNLs 5A Cardiology unit
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Clinical Nurse Specialist, Heart Failure & Transplantation
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