



DukeMedicine

Division of Cellular Therapy

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Administration of Anti-Thymocyte Globulin (ATG) Procedure

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ABMT-GEN-031 ADMINISTRATION OF ANTI-THYMOCYTE GLOBULIN (ATG) PROCEDURE

1 PURPOSE

- 1.1 To outline responsibilities of nursing staff involved with administration of Anti-Thymocyte Globulin (ATG)

2 INTRODUCTION

- 2.1 ATG has an immunosuppressive effect and is used as a component of the preparatory regimen for patients undergoing allogeneic stem cell transplantation.

3 SCOPE AND RESPONSIBILITIES

- 3.1 Attending physicians, advanced practice providers, pharmacists and registered nurses. The nurse is responsible for administration of ATG, management of side effects and assessment of response. The physician and advanced practice providers are responsible for ordering medication, assessment and direction of management of patient. (asterisk * below requires an order from physician or physician designee)

4 DEFINITIONS/ACRONYMS

- 4.1 ATG- ANTI-THYMOCYTE GLOBULIN

5 MATERIALS

- 5.1 Personal Protective Equipment

6 EQUIPMENT

- 6.1 0.2-1.0 micron filter must be used with each ATG infusion

7 SAFETY

- 7.1 ATG must be administered via a central venous catheter or high flow peripheral venous access device.
- 7.2 Chemo protective nitrile gloves and a chemoprotective gown should be worn when administering this drug. For additional information, refer to the DUH Chemotherapeutic, Biological Agents, Hazardous Drugs: Safe Handling and Spill Management Protocol.
- 7.3 The physician or advanced practice provider must be in Duke North Hospital and available during the intradermal skin test (equine only) and during the first hour of each ATG infusion.
- 7.4 Have the following emergency equipment available at the bedside and medications readily available in the Omni-Cell during ATG skin test dose (equine only) and infusion: An order must be obtained from physician or advanced practice provider prior to administration of any emergency medications or oxygen.

- 7.4.1 *Diphenhydramine 50 mg IV
- 7.4.2 *Epinephrine 0.1 mg IV
- 7.4.3 *Methylprednisolone 125 mg IV
- 7.4.4 *Oxygen equipment
- 7.4.5 Suction set up
- 7.4.6 Bedside monitoring equipment
- 7.4.7 Normal saline available as emergency flush solution

7.5 Patient will remain on the unit during infusion.

7.6 ATG should not be administered 2 hours before or after administration of blood products or amphotericin B formulations.

8 PROCEDURE

8.1 Equine ATG (ATGAM) Administration

- 8.1.1 **Do not** pre-medicate prior to skin test.
- 8.1.2 Skin test: A test dose of 0.1 ml of a 1:1000 (5 mcg) equine ATG is administered intradermally along with a control dose of 0.1 ml of normal saline (NS). Do not inform the patient which arm is receiving the control versus the drug. The skin test should be administered at 0900. The test dose is administered in one forearm and the control dose is given in the opposite forearm. The sites of injection should be observed every 15-20 minutes for the first hour after the intradermal injection. A local skin reaction of 10 mm wheal or greater and itching at the site should be considered a positive test and should be reported to the physician.
- 8.1.3 *Premedicate the patient with diphenhydramine, methylprednisolone, and/or acetaminophen as ordered prior to infusion.
- 8.1.4 Have 2 chemotherapy competent RNs independently calculate the drug dose and compare it to the ordered dose.
- 8.1.5 Usual dose of equine ATG is 30 mg/kg daily x 3 days; however, dose and schedule may vary according to treatment regimen. Validate physician order if variation noted.
- 8.1.6 *The infusion rate of each dose of Equine ATG (mixed to final concentration of 2 mg/ml) is to be incrementally increased accordingly.
 - 8.1.6.1 Infuse at 0.5 ml/kg/hr x 60 minutes
 - 8.1.6.2 Infuse at 1.0 ml/kg/hr x 60 minutes, then
 - 8.1.6.3 Infuse at 1.5 ml/kg/hr x 60 minutes, then

8.1.6.4 Infuse at 2.0 ml/kg/hr until infusion completes

8.1.6.5 Infusion must be a minimum of 4 hours

8.1.7 Vital signs should be performed every 15 minutes x 4, every 30 minutes x 2, and then every 60 minutes for the remainder of the infusion.

8.1.8 Monitor patient for adverse reactions until maximum infusion rate has been achieved and maintained for 30 minutes. After this point, monitor patient for adverse effects hourly.

8.2 Rabbit ATG (Thymoglobulin) Administration

8.2.1 **No skin test dose required for Rabbit ATG.**

8.2.2 *Premedicate the patient with diphenhydramine, methylprednisolone, and/or acetaminophen as ordered prior to infusion.

8.2.3 Have 2 chemotherapy competent RNs independently calculate the drug dose and compare it to the ordered dose.

8.2.4 Usual dose of Rabbit ATG is 2.5 mg/kg daily x 3 days; however, dose and schedule may vary according to treatment regimen. Validate physician order if variation noted.

8.2.5 *The first dose of Rabbit ATG (mixed to final concentration of 0.5 mg/ml) should be infused over a minimum of 6 hours; subsequent infusions may be infused over a minimum of 4 hours, if tolerated.

8.2.6 Vital signs should be performed every 15 minutes x 4, every 30 minutes x 2, and then every 60 minutes for the remainder of the infusion.

8.2.7 Monitor patient for adverse reactions until maximum infusion rate has been achieved and maintained for 30 minutes. After this point, monitor patient for adverse effects hourly.

8.3 Notify physician or advanced practice provider if:

8.3.1 Temperature reaches 38.0°C

8.3.2 Patient complains of itching redness, or rash

8.3.3 Chills

8.3.4 Respiratory distress, chest pain

8.3.5 Flank or back pain

8.3.6 Hypotension

8.3.7 Leg pain or headache

9 RELATED DOCUMENTS/FORMS

9.1 Document the following:

ABMT-GEN-031 Administration Of Equine Anti-Thymocyte Globulin (ATG) Procedure
ABMT, DUMC
Durham, NC

- 9.1.1 Patency of IV site/blood return from catheter.
- 9.1.2 Patient's tolerance of ATG.
- 9.1.3 Response to interventions to minimize side effects.
- 9.1.4 Patient's understanding of expected side effects and symptom management strategies.

10 REFERENCES

- 10.1 Anti-Thymocyte globulin (Rabbit) Product Information, SangStat Medical Corporation. Available: www.sanstat.com/docs/0412pi.pdf
- 10.2 Atgam Online Information, Prescription Drug Side Effects Index of the Pharmacy Network Group.
- 10.3 Available: www.pharmacynetworkgroup.com/d/atgam-description.htm
- 10.4 Clinical Pharmacology. Available via Clinical and Medical Reference Program.
- 10.5 Ezzone S, Ed. Hematopoietic Stem Cell Transplant: A Manual for Nursing Practice. Oncology Nursing Society, Pittsburgh, PA 2013, 2nd edition.

11 REVISION HISTORY

Revision No.	Author	Description of Change(s)
02	J. Loftis	Update scope and responsibilities. Addition of procedure for rabbit ATG and update monitoring guidelines for equine ATG.

Signature Manifest**Document Number:** ABMT-GEN-031**Revision:** 02**Title:** Administration of Anti-Thymocyte Globulin (ATG) Procedure

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