TRAINING UPDATE

Lab Location:	SGAH and WAH	**Date Implemented:**	01.30.2015
Department:	Blood Bank	**Due Date:**	02.15.2015

DESCRIPTION OF PROCEDURE REVISION

Name of procedure:

Granulocytes for Transfusion

Description of change(s):

AABB standard 5.12 now requires that we perform unit retypes on granulocyte products. This was added to the SOP.

Non-Technical SOP

Title	**Granulocytes for Transfusion**	
Prepared by	Stephanie Codina	Date: 2/28/2010
Owner	Stephanie Codina	Date: 2/28/2010

Laboratory Approval		
Print Name and Title	**Signature**	**Date**
Refer to the electronic signature page for approval and approval dates.		
Local Issue Date:	Local Effective Date:	

Review:		
Print Name	**Signature**	**Date**

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1. PURPOSE

A quantitative relationship exists between the level of circulating granulocytes and the prevalence of bacterial and fungal infection in neutropenic patients. Granulocyte transfusion provides the recipient with the ability to fight infection. The infusion of a granulocyte component may not be associated with a significant increase in the recipient's granulocyte count and is dependent upon multiple factors, to include the clinical condition of the recipient.

2. SCOPE

Granulocytes may be ordered and transfused for the treatment of patients with

1. Documented infections (especially gram-negative bacteria and fungi) unresponsive to antimicrobial therapy in the setting of neutropenia [absolute granulocyte count $<0.5 \times 10^9$/L (500/μL)] with expected eventual marrow recovery.
2. Neonatal sepsis.
3. A hereditary neutrophil function defect such as chronic granulomatous disease.

A trial of broad-spectrum antimicrobial agents should be used before granulocyte transfusion therapy is initiated.

3. RESPONSIBILITY

All Blood Bank employees are required to demonstrate competency in the indications for and handling of granulocytes for transfusion.

4. DEFINITIONS

Granulocytes: White blood cells that migrate toward, phagocytize, and kill bacteria and fungi.

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5. PROCEDURE

Step	Action
1	Granulocytes are not normally stored or transfused at this institution. A. Notify the clinical pathologist on call immediately when a physician requests granulocytes for transfusion. B. The pathologist will consult the treating physician and determine whether the granulocyte transfusion is indicated.
2	A current type & screen specimen is required if the pathologist approves granulocyte transfusion.
3	Contact the blood supplier and order granulocytes for the recipient. A. Granulocytes must be ABO group compatible. B. Request CMV-seronegative granulocytes if the recipient is a. CMV-seronegative or CMV-unknown b. <4 months in age C. Request irradiated granulocytes to prevent TA-GVHD in severely immunocompromised patients a. WAH must request irradiated granulocytes b. SGAH can irradiate in-house if preferred D. Once initiated, granulocyte therapy should be continued daily until a. Infection is cured b. Defervescence occurs c. The absolute granulocyte count returns to $\geq 0.5 \times 10^9$/L (500/μL) d. Treating physician decides to halt therapy.
4	When the granulocytes are received, they are entered into inventory per procedure. Each granulocyte unit requires a unit retype.
5	Granulocytes must be crossmatched to the recipient if they contain ≥2mL of red cells. A. Donor blood cells for crossmatch should be obtained at the time of donation. Refer to crossmatch procedure for specific instructions.
6	Granulocytes are stored at 20-24°C without agitation for a maximum of 24 hours.
7	Issue and transfuse the granulocytes as soon as possible after arrival. A. Granulocytes CANNOT be transfused using a leukoreduction filter. B. Depth-type microaggregate filters remove granulocytes.
8	Instruct transfusion personnel that there are risks associated with granulocyte transfusions. A. Febrile, non-hemolytic transfusion reactions are frequently noted during granulocyte transfusion. Fever and chills can be mitigated by slow administration and recipient premedication. B. Allergic reactions to red cell sedimenting solutions may occur. C. Granulocyte transfusion can worsen pulmonary function in patients with pneumonia (especially in patients receiving amphotericin B). D. Granulocyte transfusion frequently causes HLA alloimmunization and platelet refractoriness.

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6. RELATED DOCUMENTS

N/A

7. REFERENCES

1. Fung, M., Grossman, B.J., Hillyer, C.D., and Westoff, C.M. 2014. Technical Manual of the AABB, 18th ed. AABB Publishing, Bethesda, Maryland.
2. Standards for Blood Banks and Transfusion Services, 29th ed. 2014. AABB Publishing, Bethesda, Maryland.
3. Circular of information for the use of human blood and blood components. Prepared by AABB, the American Red Cross, America's Blood Centers, and the Armed Services Blood Program. Bethesda, MD: AABB, 2009.

8. REVISION HISTORY

Version	Date	Reason for Revision	Revised By	Approved By
000	1.27.15	Added requirement to perform unit retype per new AABB standard 5.12	SCodina	NCacciabeve

9. ADDENDA AND APPENDICES

N/A

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