

Hemapheresis Guidelines



Medical University of South
Carolina Hospital Authority
Hemapheresis Unit

Prepared and Presented By:
Erni Moore, RN, HP (ASCP)
Administrative
Coordinator/Manager

Introduction

- **The purpose is to provide standardized guidelines for ordering hemapheresis procedures at MUHA**
- **Standardization creates multidisciplinary synergy**
- **Standardization promotes patient satisfaction; and**
- **Better utilization of Hemapheresis staff**

THERAPEUTIC APHERESIS INDICATION CATEGORIES ENDORSED BY ASFA AND AABB (Clinical Efficacy)

- CATEGORY I. Standard and acceptable as primary or first line adjunctive. Clinical Trials.
- CATEGORY II. Generally accepted as supportive therapy.
- CATEGORY III. Represent heroic or last-ditch efforts. Insufficient evidence or conflicting results to document indication. NOT clearly indicated.
- CATEGORY IV. Lack of efficacy. Clinical application only under approved research protocol.

BENCHMARK STUDY. Staffing Patterns

Institution	Procedures	RN FTEs	FTE/Proc.	Support FTEs	Support Staff
Emory	1202	6.4	188	3.0	Manager 1, PCT 1, Secretary 1
Ohio State	1500	5.6	268	1.0	Manager 1
Duke Therapeutic Apheresis	1400	6.5	215	3.0	Manager 1 Secretary 2
Barnes- Jewish	1364	6.6	207	4.7	Manager 1 Coordinator 1.7 Secretary 1 PCT 1
MUHA	1100	4.5	244	0.5	Manager 0.5
Average	1367	6.3	219	2.9	

GUIDELINES FOR WHEN TO PERFORM APHERESIS PROCEDURES:

- ❖ Emergent: 24hours/7days a week
- ❖ Urgent: Weekends and holidays during day hours; or extending week day hours past the usual hours of operation
- ❖ Routine: Scheduled during routine hours of operation 0800 to 1600

EMERGENT PROCEDURES: DEFINITION

- **LIFE-THREATENING DISORDER OR CONDITION, on the critically ill patient**
- **On-Call Hemapheresis Staff AVAILABLE 24/7**
- **Procedure started ASAP; anytime of day or night.**
- **CALL BACK**

EMERGENT PROCEDURES

❖ Disorders/Conditions treated EMERGENTLY:

- TTP Category I
- Acute Chest Syndrome (Sickle Cell) Category I
- CVA 2° Sickle Cell Crisis Category I
- CML; Leukostasis & BLASTS >50,000 Category I
- AML; Leukostasis & BLASTS >50,000 Category I
- AML; Asymptomatic & BLASTS>100K Category I
- Myeloproliferative disorder with bleeding Category I
- ALL (Primarily in pediatric population) Category II
- Coagulopathy 2° Liver Failure Prior to Transplant surgery Category III

URGENT PROCEDURES DEFINITION:

- Performed for conditions, which warrant treatment on weekends or holidays before the next usual business day but during daytime hours.
- On-call Hemapheresis Staff available weekends and holidays
- Procedure performed ASAP during the day on WE/holidays; or extend the routine day hours Monday - Friday
- Not a call back in the middle of the night;
- Procedure can wait until the next morning.

URGENT PROCEDURES

- **Disorders/Conditions treated Urgently:**
- **Acute Myasthenia Gravis Crisis, 1st treatment** **Category I**
- **Guillain Barré Syndrome (Acute), 1st treatment** **Category I**
- **TTP, after 1st emergent treatment** **Category I**
- **Priapism in Sickle Cell Crisis** **Category I**
- **CML; Asymptomatic & BLASTS > 100,000** **Category I**
- **Wegener's granulomatosis** **Category I**
- **Goodpasture's Syndrome, 1st treatment**
 - **Pulmonary Hemorrhage** **Category I**
 - **Renal Insult** **Category I**

URGENT PROCEDURES, continued

- **Multiple Myeloma/hyperviscosity**
 - **Symptomatic** **Category II**
 - **Myeloma Kidney with renal failure** **Category II**
 - **Waldenstrom's; Symptomatic** **Category II**
 - **Rapidly progressive glomerulonephritis** **Category II**
 - **Heart Transplant Rejection (1st treatment)**
Should be scheduled routine hours of operation **Category III**
 - **Preparatory for Special Procedure in Liver failure** **Category III**
 - **Kidney Transplant Rejection -1 treatment** **Category IV***
- * Should be undertaken only under an approved research protocol.**

ROUTINE PROCEDURES: MONDAY THROUGH FRIDAY, DAY HOURS 0800 TO 1600

- Hematopoietic Peripheral Cells (BMT) Category I
- Myasthenia Gravis, after 1st treatment Category I
- CIDP Category I
- Guillain Barré, (GBS) after 1st Treatment Category I
- Miller Fisher Variant GBS Category I
- RBC Exchange for Prophylaxis Category I
- Demyelinating Polyneuropathy w/ IgG and IgA Category I
- Polycythemia Vera (Therapeutic Phlebotomy) Category I
- Porphyria Cutanea Tarda-Therapeutic Phlebotomy Category I
- Hemachromatosis (Therapeutic Phlebotomy) Category I
- Eisenmenger's (Therapeutic Phlebotomy) Category I

ROUTINE PROCEDURES: MONDAY THROUGH FRIDAY, DAY HOURS 0800 TO 1600

- Taper regimen or Chronic TTP Category I
- Transverse Myelitis Category II
- Eaton-Lambert Myasthenia Syndrome Category II
- Polyneuropathy with IgM Category II
- Cryoglobulinemia w/ neuropathy Category II
- Waldenstrom's, after 1st treatment Category II
- Glomerulonephritis, progressive Category II
- Cryoglobulinemia Category II
- Multiple myeloma w/ neuropathy Category III

ROUTINE PROCEDURES: Monday through Friday, Day hours 0800 to 1600

- Hemolytic Uremic Syndrome Category III
- Focal Segmenting Glomerulosclerosis Category III
- Kidney Transplant Sensitization Category III
- Multiple Sclerosis Category III
- Paraneoplastic Neurologic Syndrome Category III
- Vasculitis Category III
- Kidney Transplant Rejection Category IV*
- Systemic Lupus Erythematosis/nephritis Category IV*

*Should be undertaken only under an approved research protocol.

CONSULTING APHERESIS

- Call Hemapheresis Services during usual hours of operation
- Call Apheresis Resident on-call after hours, weekends, and holidays
- Apheresis Attending makes final decision as to which patients are candidates (per ASFA standard of care)
- Central Venous Line—femoral for life-threatening emergencies. Preferred location SVC.
- All procedures require: Height, weight, CBC w/diff, BMP, ionized CA++, fibrinogen, ABO, Cross Match if blood products required
- For cell depletions: Predominant cell line
- For emergent procedures, remain available for patient management during the procedure.

COMMON CAUSES FOR DELAY

- Waiting for Consultation completion
- Poor vascular access; Waiting for CVL insertion
- Waiting for lab values; weren't ordered.
- Unable to get consent from guardian or spouse
- Undetermined predominant cell line in cell reduction
- Waiting for blood products
- No Hemoglobin Variant
- Delays in Inpatient pre-medication

RESULTS:

- Guideline presentations started in June 2004.
 - ◆ Power Point presentations to Users
 - ◆ E-mailed to Referring Physicians
 - ◆ Compiled feed-back and input
 - ◆ Workload and Weekends worked

Time Period	Procedures	Weekends
July 2003 to December 2003	578	16
July 2004 to December 2004	796	18
% increase	37.7%	12.5%

REFERENCES:

- Journal of Clinical Apheresis. Vol. 15, No. 1 & 2, 2000. Special Issue Clinical Applications of Therapeutic Apheresis.
- Transfusion. Journal of the American Association of Blood Banks, Vol. 43, No. 6, June 2003.
- Apheresis: Principles and Practice. 2nd Edition. Bruce McLeod, editor. AABB Press. 2003.
- Rossi's Principles of Transfusion Medicine 3rd Edition. Toby L. Simon, et al, Editors. Lippincott Williams and Wilkins Publishing House, January 2002.
- Debra Callahan, MD, Robert Stuart, MD, Janice Lage, MD, and Erni Moore, RN, HP

QUESTIONS???



- THANK YOU FOR YOUR ATTENTION.

