Harper Hospital
Detroit Medical Center / Wayne State University

10WS
Solid Organ Transplant

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SOLID ORGAN TRANSPLANT
CROSS COVERAGE

Kidney or Kidney/Pancreas transplant patients are admitted from the PACU directly to 10WS. The primary service is Transplant Surgery (Dr(s) Gruber and West) and three surgery residents who will handle most issues regarding the patient. Transplant Nephrology (Drs Sillix, Haririan, and Amm) and a nephrology fellow also handle medical management and biopsy issues on the patients. They are particularly involved with BP and glucose management. Pager numbers for both teams are listed on the 10WS board .

New transplant patients (<6 months are followed by both services). Patients >6 months are followed by Transplant Nephrology only.

Cross-covering should include the review of medication profiles on a daily basis and checking for new orders. Medications are changed frequently on this service so please clarify any discrepancies. We are expected to do medication teaching on all new transplant recipients upon discharge. A yellow sheet on 10WS is located on the unit in the physician conference room with the preprinted order forms. Note there are also counseling stickers in there too. If you counsel, you must document in the chart with either a counseling sticker or handwritten note. This is VERY important. You are not required to order the medications for discharge. You can help facilitate this process if asked and the procedure is attached. If you have any questions, do not hesitate to call the posttransplant coordinator office @ 59205.

STANDARD LIVING/DECEASED RECIPIENT PROTOCOL:

For Induction: (Steroid avoidance protocol as of 7/01/03, no steroids after Day 3). All patients will receive Rabbit Antilymphocyte Globulin (RATG), Thymoglobulin®.

Thymoglobulin®: 1.5mg/kg (first dose based on actual BW) rounded to nearest 25mg for a total of 4 doses (first dose is given intra-op)

-Subsequent doses are based on WBC, platelets, and differential

-First dose is infused over 6 hours, subsequent doses over 4 hours

Pre-medications for Thymoglobulin® (to be given 30 minutes prior to infusion)

Acetaminophen 650mg PO/PR

Benadryl® 25mg IV

Methylprednisolone

**note that the IV methylprednisolone dose will be given as “pre-med”

Thymoglobulin may be given peripherally also. If it is given peripherally, You must add heparin 1000 units to the bag and hydrocortisone 20mg. The bag volume needs to be 500ml for peripheral infusions.

Maintenance Immunosuppression

Mycophenolate mofetil (Cellcept®) 1gm PO q12 capsules/suspension starting at 2200 on day of surgery for CADS or LD. Dose may be split into qid regimen if GI side effects occur. Cellcept® is normally given here at 1000/2200. Avoid dosing trivalent and divalent PO cation electrolyte products (such as Ca, Mg, Al) including Phoslo, MagOx, Sevelamer with PO Cellcept®. It will inhibit absorption by at least 50%. Space apart by at least 1 hour. IV dosing may be used in pancreas patients immediately post transplant due to Nasogastric tube placement. A suspension is also available in the strength of 200mg/ml.

Tacrolimus (Prograf®) 0.1-0.15mg/kg /day divided q12 (0900/2100). Dose is titrated via blood levels. Usual goal is 10-12 but can vary. See attached sheet for appropriate blood levels. The total daily IV dose is only 1/5 the total daily PO dose.

Cyclosporine (Neoral®): Initial dose 7mg/kg/day divided q12 (0900/2100). Dose is titrated for trough levels. Usual range 150-250 but can vary widely. See attached sheet. The total daily IV dose is only 1/3 the total daily PO dose.

Sirolimus (Rapamune®): 2-15mg po qd (0900)
Dose varies and is titrated for goal trough level of 10-12. Only used transplant in study patients with immediate graft function. Often used as conversion therapy 1 month – 3 months out post transplant for patients with elevated serum creatinine and side effects. Sirolimus is often combined with tacrolimus. It can also be combined with mycophenolate mofetil. A few of our patients are also on Neoral and sirolimus. See attached sheet for updated blood levels.

<u>Post op antibiotics for renal transplant</u>
Cefazolin 1gm IVPB q8hrs x 2 doses OR
Clindamycin 900mg IVPB q8hrs x 2 doses (if penicillin allergic)

<u>Post op antibiotics for pancreas transplant</u>
Ampicillin/Sulbactam 3gm IV Q8
Vancomycin 1 gm IV X 1 (preop)
Aztreonam 1gm IV (preop)

Valganciclovir started on Day 1or Day 2.
For CMV +/-, dose is 900mg po qd (for 6 months if on Prograf)
For CMV +/+ or -/+, dose is 450mg qd
No viral prophylaxis is given for CMV-/-
Doses for both IV ganciclovir and PO valganciclovir shoud be adjusted for renal function. Antiviral therapy is generally continued for 90 days except in +/- serostatus group on Prograf where it will be continued for 6 months.

Bactrim®SS: 1 tab po qd (starts when patient is eating usually)
Continued for 6 months post transplant

Nystatin 5ml S/S QID x 30 days

Other Miscellaneous Meds:
Ranitidine 50mg IV q24 convert to PO 150mg po qd
Aspirin 81mg poqd, if tolerated

After the 4 doses of Thymoglobulin, patients will not receive anymore Methylprednisolone. For methylprednisolone drug shortages, the dose schedule for methylprednisolone which can be converted to Dexamethasone 250mg (50mg) IV on Day #0, 125mg (25mg) IV on Day 1, 100mg (20mg) on Day 2 and 100mg (20mg) on Day 3.

Patients will only continue on steroids if any of the following are present: steroids are part of their medication regimen for their underlying disease(lupus, vasculitis, Addison's disease), retransplant where they are still receiving steroids.

If a patient develops biopsy proven rejection post transplant on the steroid free regimen, they will be treated with steroids and continue on steroids thereafter.

Other Medications that are sometimes used:

Daclizumab (Zenapax®) is sometimes used but only in our new protocol for HIV+ recipients everyone else is to receive thymoglobulin (rabbit antilymphocyte globulin) and a steroid free protocol. The dose is 1.5mg/kg IV days 0 and day of discharge. (Two total doses only should be given). Basiliximab (Simulect®) is no longer formulary at Harper)

Azathioprine (Imuran®) is still used in patients who were transplanted before the switch to Cellcept® or in patients intolerant to Cellcept®. The dose is usually 1 to 1.5mg/kg/day. The IV and PO dose are equivalent.

Treatment of Acute Rejection (T-cell mediated)

Methylprednisolone 250mg or 500mg IV qd for 3 days, is usually used first line and is effective for most cases. Patients will then be tapered down on prednisone and most likely will stay on prednisone for life especially African-Americans.

Depending on severity of rejection and past history of rejection treatment patient may receive one of the following:

Thymoglobulin 1.5mg/kg (dosed by flow cytometry after the first dose) Central or Peripheral administration maybe used. Please check the form carefully for Type of administration. Call for clarfications. Peripheral administration involves using heparin 1000 units, hydrocortisone 20mg and the fluid volume is always 500ml.
(with pre-medication)

Rarely Used

Muromonab (OKT3®) 5mg IVP for 10-14 days.
(Patient will require pre-medication with methylprednisolone, APAP, and diphenhydramine)

Treatment of Antibody Mediated Rejection (AMR)

There are two treatment protocols used here for Antibody Mediated Rejection or B-cell mediated rejection. Both incorporate IVIG but at different doses. IVIG is approved by the DMC for this indication.

Regimen one (High dose IVIG): IVIG 2gm/kg IV, may be repeated

Regimen two (Low dose IVIG): Plasmapheresis followed by IVIG 100mg/kg

IVIG is always administered on 10WS in the outpatient room bed 10401-01, if the patient goes to Plasmapheresis they **WILL NOT** receive the IVIG in pheresis. It should be sent to 10WS where it will be administered.

There is an IVIG infusion rate calculation on the internet for patients the website is: http://gucfm.georgetown.edu/cgi-bin/welchjj/ivig.cgi

Other medications rarely used for AMR:

Rituximab (Rituxan®) 375mg/m^2 IV x 1. See attached chemotherapy order form. This must be signed by an attending. Rituximab is dosed on BSA. IVDT will hang the medication. Please follow the Karmanos Hypersensitivity/Allergy protocol should any adverse events arise.

DISCHARGE PROCESS FOR RECIPIENTS

1. Identify who needs to be discharged from sign out sheet or coordinators.

2. Obtain a copy of the yellow medication sheet found in the 10WS physician conference room where the transplant preprinted order forms are located. See attached.

3. Complete the medication regimen from the patients profile. Note to fill in times correctly on the right side of the sheet. Q12 for Prograf and Cellcept are usually at 9a/9p. Most daily meds are listed at 9am. Remind patients specifically not take their immunosuppression medications on the day of the clinic appointment. They must bring the dose with them to clinic and take after their blood is drawn. You MUST use a PENCIL to fill in the sheet. No permanent ink on the sheet. The patients are instructed to change medications frequently and this sheet will need to be updated frequently. Remind them to always bring it with them to clinic.

4. Counsel the patient regarding the medications. You can supplement by using the Pink Kidney Handbook (Medications begin on page 11) which should already be handed out to the patients by the coordinators or the nurses. Pat Rosenberg, the unit manager for 10WS, has more books if you need them.

5. Document in the chart that you have counseled the patient. This is very important for billing purposes. If you feel that the patient is not grasping the medications. You can talk to Heather Tarnowski (CMS) and she will set up VNA for home teaching.

Below this Line is Optional

6. If you want to help facilitate the discharge process even more although you are not required, you can find out where the patient may go for discharge medications from the social worker call 59205 and ask for Andrea or Amanda. Our patients need to get their medications from King's Pharmacy or Procare because they can bill Medicare. The Harper Pro building also can bill Medicare now but most patients elect not to go there because of the personal delivery process provided by the other two pharmacies. King and Pharmacare deliver the same day and are ideal for patients especially for quick discharges. Attached is the discharge form for each pharmacy with phone and fax numbers. You will need to fill out the form or have the posttransplant coordinators help you. They can be reached at 59205. The sheet will need to be faxed along with a patient face sheet which can be printed out from CIS. Heather can help you print the face sheet her pager is (#02297).

7. If you have any questions, never hesitate to call 59205 with questions. Ask for Diane, Gerie, or Rani and they will help you. They also can do the whole process. You will still need to do the counseling and the yellow sheet.

DISCHARGE PROCESS FOR LIVING DONORS

1. See Appendix.

Transplant Team Desired Trough Levels

Neoral/MMF	txp-3m	300-350
	3-6m	275-300
	6m-1yr	225-275
	1-2yr	175-225
	2+	100-200
Prograf/MMF	txp-3m	10-12
	3-6m	8-10
	6m-1yr	8-10
	1-2yr	8
	2+	5-7
Rapa/MMF	txp-3m	10-12
	3-6m	8-10
	6m-1yr	8-10
	1-2yr	8-10
	2+	5-8
Rapa/FK	txp-3m	7-10/5-8
	3-6m	7-10/5-8
	6m-1yr	7-10/5-8
	1-2yr	6-8/4-6
	2+	4-8/4-6
Rapa/FK/MMF	txp-3m	Not used
	3-6m	
	6m-1yr	
	1-2yr	
	2+	
Prednisone (most txp after 6/15/03 will be steroid free)	at 2wks (day 14)	20mg
	at 3wks (day 21)	17.5mg
	at 4wks (day 28)	15mg
	at 6wks (day 42)	12.5mg
	at 8wks (day 56)	10mg
	at 10wks (day 70)	7.5mg
	at 3m	5mg
	at 4m	5mg
	at 6m	5mg
	at 1yr	5mg
	at 18m	5mg/2.5mg
	at 2yr	5mg/2.5mg/0

Coordinators:

put copy in all charts.

don't need to call Doc if level within range, Cr stable with no recent med changes

Revised: July 3, 2003

Harper University Hospital
Detroit Medical Center / Wayne State University

Organ Transplant Program
4160 John R Rd
Suite 629 & 630
Detroit, MI 48201

HARPER UNIVERSITY HOSPITAL
TRANSPLANT SURGERY CENTER
Discharge Medications for Living Donors

1. Residents write a prescription on an outpatient prescription pad for the donor (ie. Vicodin #40).

2. The prescription is hand delivered (not "tubed") to the inpatient central pharmacy in the Brush basement by PCA, nurse, coordinator, pharmacist, or physician. This can be done on weekends since Central pharmacy is open 24 hours a day.

3. The prescription will be filled on the donor's inpatient profile. The medication will be dispensed from the narcotic vault central. Pre-packs cannot be dispensed from Same Day Surgery or the ER for these patients.

4. Medication is taken from the Central pharmacy to the floor by the nurse, coordinator, pharmacist or physician.

5. The billing will be rolled into the donor's inpatient charges. There will be no additional outpatient fee or transaction with the insurance.

Dr. Scott Gruber	Dr. Dale Sillix	Dr. James Garnick
Transplant Surgeon	Transplant Nephrologist	Transplant Pharmacist

Written/revised: May 29, 2003

NAME: _____

NO GRAPEFRUIT OR GRAPEFRUIT JUICE

NO Advil, Motrin, Aleve, ibuprofen or any over the counter medications for pain. Take only Tylenol/acetaminophen

MEDICATION	DIRECTIONS	PURPOSE	TIME			
Rapamune 1mg / 2mg		Anti-rejection				
Prograf 0.5mg / 1mg / 5mg		Anti-rejection				
Neoral 25mg / 100mg		Anti-rejection				
CellCept 250mg / 500mg		Anti-rejection				

DO NOT TAKE ANY OF THE ABOVE MEDICINES ON CLINIC DAYS UNTIL *AFTER* BLOOD IS DRAWN. TAKE IT *IMMEDIATELY AFTER* BLOOD IS DRAWN.

TAKE YOUR BLOOD PRESSURE MEDICINES ON YOUR REGULAR SCHEDULE <u>BEFORE</u> CLINIC, IT WILL NOT AFFECT YOUR BLOOD DRAW.

Nystatin Suspension	5ml (1 teasp.)Swish and swallow	Helps to prevent fungal infections				
Bactrim SS		Helps to prevent lung infection				
Valcyte 450mg(take w/ food)		Helps to prevent viral infections				

Rev: 01/22/2004 gos

Procare Patient Registration Form Phone: 800-571-9833 FAX: 800-916-7804

Name:

Address:

Date of Birth: Phone:

Physician: Drs. J. El-Amm, A. Haririan, D. Sillix

Address: 4160 John R, Ste. 629, Detroit, MI 48201

Phone: 313-882-6745 FAX: 313-745-9205

Insurance:

Transplant Date: Facility:

Discharge Date:

Type of Transplant: Transplant #

Transplant Coordinator/Phone: Diane, Gerrie, Rani. 313-745-9205

Medications

Drug/Strength	SIG	Quantity	Refills

Pharmacy Form rev 3/10/2004

King's Pharmacy Patient Registration Form Phone: 313-584-7800 Fax: 313-584-7833

Name:

Address:

Date of Birth: Phone:

Physician: Drs. J. El-Amm, A. Haririan, D. Sillix

Address: 4160 John R. Suite 629, Detroit, MI 48201

Phone: 313-745-9205 FAX: 313-966-2684

Insurance:

Transplant Date: Facility:

Discharge Date:

Type of Transplant: Transplant #

Transplant Coordinator/Phone: Diane, Gerrie, Rani 313-745-9205

Medications

Drug/Strength	SIG	Quantity	Refills

Pharmacy Form rev 3/10/2004