## UCMB – Living Donor Kidney Transplant Immunosuppressive Guidelines

### Population

**Defined by these RISK Categories (RC)**

At time of Tx select LOW, NORMAL or HIGH RC. Over time post-Tx, may need to transition to Oliguric ATN/Delayed CrCl/ Slow Graft Function (SGF) RC based on clinical situation.

### Induction

| RC: Low Risk¹ | Basiliximab (Simulect*)⁴  
20 mg IV  
2 doses: POD #0 and POD #3-4 | Taper⁷,⁸,⁹  
Initiate PERI-op | 1000mg PO BID  
Initiate PRE operatively | Tacrolimus (Prograf*)  
Starting dose 0.2mg/kg/day divided in 2 daily doses¹¹  
Use weight-based dosing to rapidly obtain therapeutic levels  
Initiate on POD #0 |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| RC: Low Risk African American¹ | Rabbit antithymocyte globulin⁵,⁶ (Thymoglobulin*)  
1.5mg/kg/dose  
3 doses: POD #0, 1, 2  
Total dose = 4.5mg/kg  
Initiate intraoperatively | Taper⁷,⁸,⁹  
Initiate PERI-op | 1000mg PO BID  
Initiate PRE operatively | Tacrolimus Target Levels  
POD #0-89: 10-12 ng/mL  
POD #90-364: 8-10 ng/mL  
POD #≥365: 6-8 ng/mL if no rejection history |
| RC: Normal Risk¹ | Rabbit antithymocyte globulin⁵,⁶ (Thymoglobulin*)  
1.5mg/kg/dose  
4 doses: POD #0, 1, 2, 3  
Total dose = 6mg/kg  
Initiate intraoperatively | Taper⁷,⁸,⁹  
Initiate PERI-op | 1000mg PO BID  
Initiate PRE operatively | Tacrolimus Target Levels  
POD #0-89: 10-15 ng/mL  
POD #90-364: 8-10 ng/mL  
POD #≥365: 6-8 ng/mL if no rejection history |
| RC: High Risk¹ | Rabbit antithymocyte globulin⁵,⁶ (Thymoglobulin*)  
1.5mg/kg/dose  
5 doses: POD #0, 1, 2, 3, 4  
Total dose = 7.5mg/kg  
Initiate intraoperatively | Taper⁷,⁸,⁹  
Initiate PERI-op | 1000mg PO BID  
Initiate PRE operatively | Tacrolimus Target Levels  
POD #0-89: 10-15 ng/mL  
POD #90-364: 8-10 ng/mL  
POD #≥365: 6-8 ng/mL if no rejection history |

¹ Age > 65 years or 0 antigen mismatch (not HLA identical)  
² No immunologic risk factors  
³ One or more immunologic risk factor  
⁴ Intravenous  
⁵ Oral  
⁶ Intramuscular  
⁷ 1st wk  
⁸ 2nd wk  
⁹ 3rd wk  
¹⁰ Intravenous  
¹¹ Intravenous
RC: Oliguric ATN/Delayed CrCl/SGF

- UOP < 250ml in first 12 hours
- UOP < 500ml in first 24 hours
- No ↓ Scr by > 10% in first 48 hours

<table>
<thead>
<tr>
<th>Rabbit antithymocyte globulin5,6 (Thymoglobulin®)</th>
<th>Taper7,8,9</th>
<th>1000mg PO BID</th>
<th>2mg PO BID12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5mg/kg/dose given POD #0, 1, then every other day 3-5 doses based on physician discretion</td>
<td>Initiate PERI-op</td>
<td>Initiate PRE operatively</td>
<td>Initiate by POD #1</td>
</tr>
</tbody>
</table>

**Note:** Rabbit antithymocyte globulin (Thymoglobulin®) can be administered peripherally as an outpatient.

**Refer to UCMC Kidney Transplant Immunosuppressant Guidelines: HLA Identical Guidelines**

**HLA Identical**

*Patients with all of the following:*
- 2 haplotype match (0 mismatch for A, B, C, DR, DQ, DP)
- Recipients of a living-related kidney transplant
- No pre-existing DSA or positive crossmatch

**Exclusion criteria:**
- Recipients of a living related kidney transplant
- Recipients of a living donor kidney transplant
- Recipients of a deceased donor kidney transplant
- No pre-existing DSA or positive crossmatch
- UOP < 500ml in first 24 hours
- UOP < 250ml in first 12 hours

**Immunologic Risk Factors:**
- Repeat renal transplant (for kidney after liver transplant recipients, only give 3 doses of Thymoglobulin on POD #0, 1, 2)
- Type 1 diabetes
- African American ≤ 65 years
- Peak cytotoxic PRA > 50% or current cytotoxic PRA > 25%
- Positive DSA
- Positive T or B cell flow crossmatch with a positive DSA
- Female recipient with exposure to paternal antigen

**Oliguric ATN/Delayed CrCl/SGF**

If patient experiences oliguric ATN, delayed CrCl, or SGF: refer to the Oliguric ATN/Delayed CrCl/SGF guideline as appropriate. Not: Any patient experiencing Oliguric ATN/Delayed CrCl/SGF who is not in a research protocol will receive immunosuppression based on these guidelines, regardless of regimen initiated at transplant.

**3Oliguric ATN/Delayed CrCl/SGF**

Consider performing kidney allograft biopsy at 7-10 days post-transplant, then weekly until kidney function starts to recover.

**Basiliximab Administration**

Second dose can be administered peripherally as an outpatient.

**Thymoglobulin®**

- Use pre-op weight on day of transplant for dose calculations
- Round doses to nearest 25 mg
- Premedication: administer 30 minutes before dose
  - Steroids = 500mg methylprednisolone pre-op for first dose then daily steroid taper
  - Acetaminophen 650mg PO
  - Diphenhydramine 25mg PO
- Administration: 1st dose over 24 hours and subsequent doses over 4-6 hours. Decrease rate if adverse events occur or if patient becomes hemodynamically unstable

**Laboratory parameter**

<table>
<thead>
<tr>
<th>Adjustment</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANC &gt;1200 cells/μL</td>
<td>ANCl</td>
</tr>
<tr>
<td>ANCl ≤ 1200 cells/μL</td>
<td>Reduce dose by 50%</td>
</tr>
<tr>
<td>OR PLT &gt; 80,000 cells/μL</td>
<td>Hold dose</td>
</tr>
</tbody>
</table>

**Steroid Administration**

Administer methylprednisolone prior to rabbit antithymocyte globulin (Thymoglobulin®) dose when appropriate.

<table>
<thead>
<tr>
<th>POD</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylprednisolone IV</td>
<td>500</td>
<td>250</td>
<td>125</td>
<td>80</td>
<td>--</td>
<td>--</td>
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</tr>
<tr>
<td>Prednisone PO</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>60</td>
<td>40</td>
<td>30</td>
<td>20</td>
</tr>
</tbody>
</table>

**Steroid Taper**

**CRITERIA for STEROID continuation:**

Consider continuing prednisone 5mg PO daily indefinitely if the following:
- History of biopsy-proven IgA nephropathy
- DSA ≥ 4000 MFI prior to transplant
- Chronic prednisone use at time of transplant

**Mycophenolate recommended dose adjustments**

<table>
<thead>
<tr>
<th>WBC ≤ 3000 cells/μL</th>
<th>Mycophenolate mofetil (MMF)</th>
</tr>
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<tbody>
<tr>
<td>Refer to leukopenia management guideline</td>
<td></td>
</tr>
<tr>
<td>MPA AUC methodology can be found in the PK monitoring of mycophenolate mofetil (Cellcept®) guidelines</td>
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<table>
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<tr>
<th>ANC ≤ 1500 cells/μL</th>
<th>Mycophenolate mofetil (MMF)</th>
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<td>Refer to leukopenia management guideline</td>
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**For African Americans:**
- Consider tacrolimus starting dose of 0.2 mg/kg/day divided in 2 daily doses
- Consider tacrolimus at 4 mg PO BID

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