Protocol for Opportunistic Infection Prophylaxis for Liver Transplant Recipients

**Indications:** Any patient who has received a liver or combined liver-kidney transplant.

**Procedure:**
- The transplant MD will initiate therapy when the patient is in the hospital at the time of transplant, the inpatient clinical pharmacist will document the plan for Opportunistic Infection Prophylaxis in the electronic medical record at the time of transplant. The transplant coordinator or pharmacist will notify transplant provider at the time medication is due to be discontinued. The transplant coordinator will document plan in OCW.

**Adult Liver Transplant Recipients at time of transplant:**
1. **For pneumocystis (carinii) jiroveci pneumonia (PJP):**
   - **First Line:** Trimethoprim/sulfamethoxazole single strength by mouth 1 daily for 6 months post transplant. This regimen also prevents nocardia and toxoplasmosis. Cost: less than $10 per month.
   - **Second Line:** For sulfa allergic patients or patients intolerant to trimethoprim/sulfamethoxazole: G6PD Screen should be sent, if normal: dapsone 100mg by mouth daily for 6 months. This regimen also prevents toxoplasmosis; Cost: $40-50/month
   - **Alternatives:**
     i. Pentamidine 300mg inhaled every month for 6 months
        Considerations: Medicare unlikely to pay, caution with reactive airway diseases, does not prevent toxoplasmosis, nocardia; PJP in the upper airways has been reported
     ii. Atovaquone 1500mg by mouth daily
        Considerations: also prevents toxoplasmosis; Cost: $1500 per month
2. **Systemic antifungal prophylaxis with fluconazole 200mg PO daily for one month,** for the following high risk patients:
   - Patients transplanted for fulminant hepatic failure
   - Renal failure (SCr>3.0 or dialysis) at the time of transplant
   - Those who require a return to the operating room after transplant
   - Re-transplant
   - Prolonged operative course (>8 hours)
   - Roux-en-Y
   - History of fungal infections sensitive to fluconazole prior to transplant
   - >40 intraoperative blood transfusions
3. **For thrush prophylaxis (not necessary if patient is on fluconazole):**
   - Nystatin Suspension 5 ml swish and swallow 3 times daily for 2 weeks post transplant
   - **OR**
   - Clotrimazole Troche dissolve one in mouth 3 times a day for 2 weeks post transplant.
   - If patient is not on steroids, thrush prophylaxis is stopped when patient is discharged from hospital.
4. **For cytomegalovirus prophylaxis:** See Cytomegalovirus prophylaxis protocol

**Pediatric Liver Transplant Recipients at time of transplant:**
1. **For pneumocystis carinii pneumonia:**
   - Trimethoprim/sulfamethoxazole 150 mg/m2 (of trimethoprim) divided twice daily on Mondays, Wednesdays, and Fridays for 6 months post transplant.
2. **For thrush:**
   - Nystatin Suspension (2.5ml if < 20 kg, 5 ml if > 20 kg) swish and swallow 4 times daily for 3 weeks post transplant
3. **For cytomegalovirus and Epstein-Barr virus (EBV):**
   - Ganciclovir _____ (5mg/kg*) intravenous every 12 hours for 7 days or until discharge from hospital.
   - Then switch to valganciclovir (see EBV protocol)
     a. Infants 1-3 months of age: 16 mg/kg/dose every 12 hours
     b. Infants, Children, and Adolescents 4 months to 16 years:
        Once daily dose (mg) = 7 x body surface area x creatinine clearance*
        Doses should be rounded to the nearest 25 mg increment; maximum dose: 900 mg/day
        * Cl\(_cr\) (mL/minute/1.73 m\(^3\)) = [k x height (cm)] ÷ serum creatinine (mg/dL)
Note: If the calculated $\text{Cl}_{\text{cr}}$ is $>150$ mL/minute/1.73 m$^2$, then a maximum value of 150 mL/minute/1.73 m$^2$ should be used to calculate the dose.

Note: Calculated using a modified Schwartz formula where $k =$
- 0.45 in patients <2 years
- 0.55 in boys age 2 to <13 years
- 0.55 in girls age 2-16 years
- 0.7 in boys age 13-16 years

c. Adolescents older than 16, refer to adult dosing

Opportunistic Infection Prophylaxis after treatment for Rejection:

1. Any patient who receives Thymoglobulin or methylprednisolone pulse/prednisone taper for rejection:
   a. CMV for 3-6 months (6 months if D+R-, see above for dose schedules)
   b. PJP prophylaxis for 3 months
   c. Nystatin until prednisone is decreased to 15 mg daily

Revised 1/2/08; 10/1/08; 8/20/09; 6/18/12;

Compliance, Policy & Regulatory Committee Approval

6/21/2012

Date

Please see original document on transplant website.

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Date