Guideline for Cytomegalovirus (CMV) Prevention in Adult Abdominal Transplant Recipients

Indications: Any patient who has received a kidney, pancreas, or liver transplant or is being treated for rejection

Procedure: After transplant surgery or after treatment for rejection, the transplant provider will begin anti-viral therapy in the hospital. The clinical pharmacist will document, in the EMR, the plan for CMV prophylaxis.

1. **For D(+) and R(-) OR induction/rejection treatment with lymphocyte depleting agents (LDA)** (alemtuzumab, rituximab, anti-thymocyte globulin):
    - Either IV ganciclovir or oral valganciclovir prophylaxis should be initiated within 24 hours
    - Antiviral therapy should be adjusted for renal dysfunction and continued according to the prophylaxis dose and duration outlined below.

2. **For any other D/R combination** antiviral prophylaxis should be initiated when extubated, or within one week of transplantation or after rejection treatment with lymphocyte depleting agents.
    - Antiviral therapy should be adjusted for renal dysfunction and continued according to the prophylaxis dose and duration outlined below.

3. **Alternative regimens** for CMV prophylaxis may be utilized for the following indications:
    - Inadequate insurance coverage for valganciclovir
    - Leukopenia or intolerance to valganciclovir
    - Patients utilizing the preemptive surveillance due to financial constraints should receive a patient assistance packet and be referred to the Patient Assistance Coordinator to prepare for the possibility of future valganciclovir need

4. **Preemptive Surveillance**
    - All patients are to receive acyclovir for 3 months for HSV prophylaxis, adjusted for renal dysfunction. Refer to table below.
    - Obtain CMV DNA by PCR (quantitative) weekly, or with routine labs—whichever is less frequent, through the post-op prophylactic period.
    - If the antigen or PCR become DETECTABLE, refer to CMV Treatment Guideline

Table 1: CMV PROPHYLAXIS POST-TRANSPLANT

CMV SEROSTATUS	LDA USE?	PROPHYLAXIS	DURATION	ALTERNATIVE
Donor +, Recipient -	YES OR NO	Valganciclovir	6 months	None
Donor +, Recipient +, Donor -, Recipient + , Donor -, Recipient -	YES	Valganciclovir	3 months	None
Donor +, Recipient +, Donor -, Recipient +	NO	Valganciclovir	3 months	Preemptive surveillance plus acyclovir
Donor -, Recipient -	NO	Acyclovir	3 months	n/a

LDA= leukocyte depleting agent (i.e. alemtuzumab, anti-thymocyte globulin, rituximab)

Table 2: VALGANCICLOVIR DOSE

CrCl (mL/min) Calculated using Cockroft-Gault	**PROPHYLAXIS DOSE**
≥ 60	Kidney, Pancreas recipients: 900 mg PO daily Liver transplant recipients: 450 mg PO daily*
40-59	450 mg PO daily
25-39	450 mg PO three times weekly
10-24	450 mg PO two times weekly
<10	100 mg three times weekly following dialysis
*modified per Pescovitz MD Antimicrob Agents Chemother. 2000; 44:2811-5.; Kalil A Clinical Infectious Diseases 2011;52(3):313–321;	

Table 3: IV GANCICLOVIR

CrCl (mL/min) Calculated using Cockroft-Gault	**PROPHYLAXIS DOSE**
≥ 70	5 mg/kg every 24 hours
50-69	2.5 mg/kg every 24 hours
25-49	1.25 mg/kg every 24 hours
10-24	0.625 mg/kg every 24 hours
< 10	0.625 mg/kg three times weekly following dialysis
CRRT	2.5 mg/kg every 24 hours

Table 4: ACYCLOVIR DOSE FOR HSV PROPHYLAXIS

CrCl (mL/min)	**DOSE ADJUSTMENT**
> 10	200mg PO three times daily
< 10	200 mg PO twice a day
Source: Micromedex Drug Evaluations	

Sources: Updated International Consensus Guidelines on the Management of Cytomegalovirus in Solid-Organ Transplantation (available online at www.transplantjournal.com or Transplantation journal 2013)

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