



# CMV - The troll of transplant and its complications among post liver transplant recipients

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## INTRODUCTION

Cytomegalovirus (CMV) has been an important immune-modulating virus affecting organ transplant recipients, contributing directly and indirectly to both morbidity and mortality in these patients. We describe 3 cases which developed early and late complications indirectly due to CMV disease.

## OBJECTIVES

1. To describe various clinical presentations of CMV disease.
2. To describe role of CMV serostatus is an important factor for CMV reactivation that can lead to disease and malignancy, especially among donor seropositive and recipient seronegative CMV.

## METHOD

We describe 3 post liver transplant patients of varying periods, consisting of 2 high risk CMV serostatus D+/R- (donor seropositive, recipient seronegative) and 1 intermediate risk CMV serostatus D+/R+ (donor and recipient seropositive). The D+/R- patients had developed diseases - one diagnosed as CMV colitis and the other diagnosed as CMV oesophagitis. The D+/R+ patient had pancytopenia complicated with liver abscess.

## RESULTS

Despite given valganciclovir as CMV prophylaxis for 3 months, these liver transplant patients still developed complications of CMV disease. All 3 patients were treated with IV ganciclovir for longer than 2 weeks with at least 2 undetectable CMV quantitative PCR viral load 1 week apart. All had good outcomes apart from a high risk CMV serostatus (D+/R-) patient with CMV oesophagitis, as she had been diagnosed with squamous cell carcinoma of the head scalp, likely due role of CMV implicated as a potential risk for malignancy.

G-CSF			
CMV PCR 13130	CMV PCR 366	CMV pcr ND	CMV pcr ND

	PreOp Feb '22	Mid Apr	End Apr	Mid May	End Jun	Mid July	End July	Mid Aug	Late Aug
Wcc	4.8	4.7	6.8	2.9	1.57	1.75	4.4	7.9	
ANC						0.74	0.76	6.15	
Hb						8.3	8.1	9.4	
Plt	79	102	115	104	62	120	69	121	
Tbil			13.3	10.2	10.6	8.1	9.1	8.4	
ALT			21.9	16.9	38.1	114	58	9.3	
AST			23	22	50	112	32	49	
TAC (5-20ng/ml)			5.93		5.26	4.51	7.66	5.86	

VGC 900mg od CMV primary prophylaxis				
Tacrolimus FK506	1.5mg bd	6.5mg od	7.5mg od	6.5mg od
MMF	750mg bd	750mg bd	500mg bd	250mg bd

**32 y/o lady**  
cadaveric liver transplant mid Feb '22  
CMV IgG D+/R+

- 5 mths post LTx:
- Admitted mid-July 2022 fever x 2/7
  - Incidental transaminitis ALT > AST
  - Persistent pancytopenia
  - iv ganciclovir 5mg/kg bd x ~3/52
  - Blood c&s and perihepatic fluid c&s No growth

US abdomen - segment VI subcapsular collection 4.3 x 6.1 x 10.6cm -drained

US abdomen - segment VI subcapsular collection 2.1 x 3.9 cm -drained

**CASE 1**  
CMV IgG D+/R+

G-CSF (16/3-18/3), (21/3-20/4), (26/4-28/4/22), (5/5/22 - 9/5/22)						
CMV PCR Jan '22 ND	CMV PCR 17Mac 12,370	CMV PCR 28Mac 29,090	CMV PCR 8Apr 6865	CMV PCR 15Apr 940	CMV PCR 25Apr ND	CMV pcr 2May ND

	Pre-op Oct '21	Mid Mac '21	Late Mac '21	Early Apr '21	Mid Apr '21	Late Apr '21	Early May '21
Wcc		1.15	4.84	1.18	7.06	3.71	3.03
ANC		0.56	3.68	0.57	4.39	1.36	1.24
Hb		12.3					
Plt		88					
Tbil		18.9					
ALT		55.3					
AST		49					
TAC (5-20ng/ml)		9.6	9.6		5.26	4.51	7.66

VGC 900 mg od CMV primary prophylaxis				
Tacrolimus FK506	3.5mg bd	6.5mg od	7.5mg od	6.5mg od
MMF	750mg bd	750mg bd	500mg bd	250mg bd

**28 year old man**  
cadaveric liver transplant late Oct '21  
CMV IgG D+/R-. VGC 2.11.21 - 1.2.22 (3mths)

- 4 mths post LTx :
- Admitted mid-March 2022
  - Profuse diarrhoea > 1/52, wt loss 4kg
  - Incidental transaminitis ALT > AST
  - Worsening bicytopenia
- iv ganciclovir 53 days

Colonoscopy : Terminal ileum & ascending colon mucosa inflamed

Colon Bx: CMV stain nuclear positivity

**CASE 2**  
CMV IgG D+/R-

## DISCUSSION

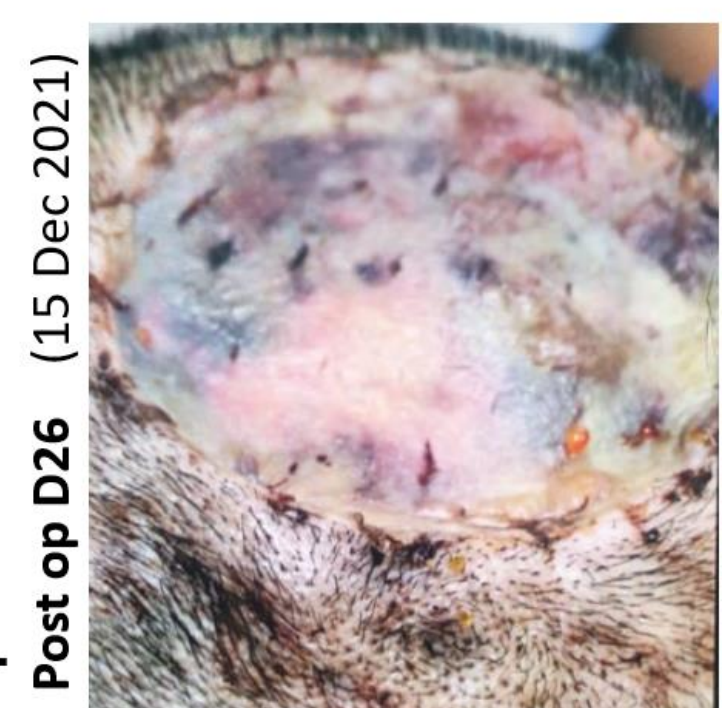
Treatment duration of gastrointestinal CMV disease should be patient-specific, and guided by virologic and clinical improvement. If CMV viremia is present, at least two consecutive negative CMV PCR must be taken 1 week apart to ensure viral clearance prior to antiviral discontinuation. Consideration should be made for reduction in immunosuppressive therapy to the lowest possible safe dose, especially in patients with severe CMV disease, non-response to therapy, high viral load, or leukopenia.

CMV PCR 6/12 Not detected	CMV PCR 10/12 Not detected
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	16/11	18/11	26/11	1/12	6/12	12/12	14/12	15/12	29/12
WCC	3.7	5.5	5.07	3.93		4.37	6.5		4.8
ANC	2.9	4.64	4.08	2.23			5.59		
ALC	0.4	0.63	0.51	1.23			0.57		1.01
Hb	11.6	11.9	11.6	11.2		10.9	11.3		11.6
Plt	178	206	177	138		125	154		206
Urea	7	7.3	4.9			6.3	5	6.9	
Cr	72	81	72			60	55	63	
Tbil	9	8.8	15	39 ↑D		9.4	21	11.9	
ALP	54	59	80	199		155	209	223	
ALT	6	83	43	153		96.7	116	111	
AST		17	76			24	201	65	
TAC			5.93		3.92			5.99	

VGC 900mg od		
Tacrolimus FK506	1.5mg bd	2mg od
MMF	1g bd	500mg bd

- 59 year old lady
1. Autoimmune hepatitis 2003  
Cadaveric liver transplant June 2015
  2. Limited Systemic Sclerosis 2005 (now on pred 5mg) calcinosis, Raynaud's, reflux oesophagitis
  3. PVD + atherosclerosis
- Admitted Nov 2021 for ulcerative scalp lesion x 2mths & dysphagia  
OGDS Reflux esophagitis, HPE CMV  
Scalp biopsy : Squamous cell CA



**CASE 3**  
CMV IgG D+/R-

## REFERENCES

1. Razonable RR, Humar A. CMV in solid organ transplant recipients—guidelines of the American Society of Transplantation Infectious Diseases Community of Practice. Clinical transplantation. 2019 Sep;33(9):e13512.
2. Fishman JA. Infection in solid-organ transplant recipients. New England Journal of Medicine. 2007 Dec 20;357(25):2601-14.