V EDICIÓN JORNADA CIENTÍFICA
Gesitra-IC
ACTUALIZACIÓN EN LA PATOLOGÍA INFECCIOSA DE PACIENTES INMUNOCOMPROMETIDOS

Hospital Universitario Ramón y Cajal

5 Y 6 MARZO 2026
ICOMEM
Ilustre Colegio Oficial de Médicos de Madrid
MADRID

LO MEJOR DE 2025 EN…
INFECCIONES EN TRASPLANTE DE ÓRGANO SÓLIDO

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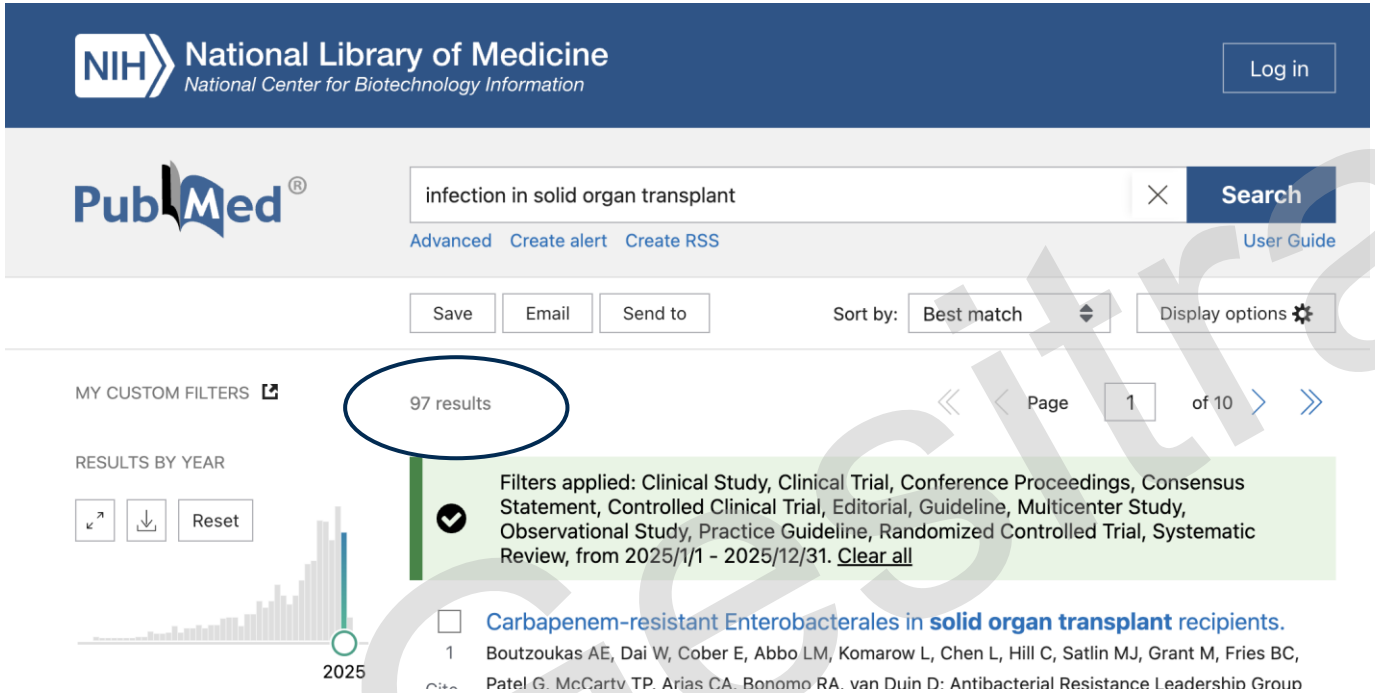
Top papers 2025 – Infections in solid organ transplant patients



- Infección por CMV
- Infección bacteriana
- Infección transmitida donante
- Infección hepatitis E
- Infección herpesvirus no CMV
- Infección por micobacterias
- Infección fúngica

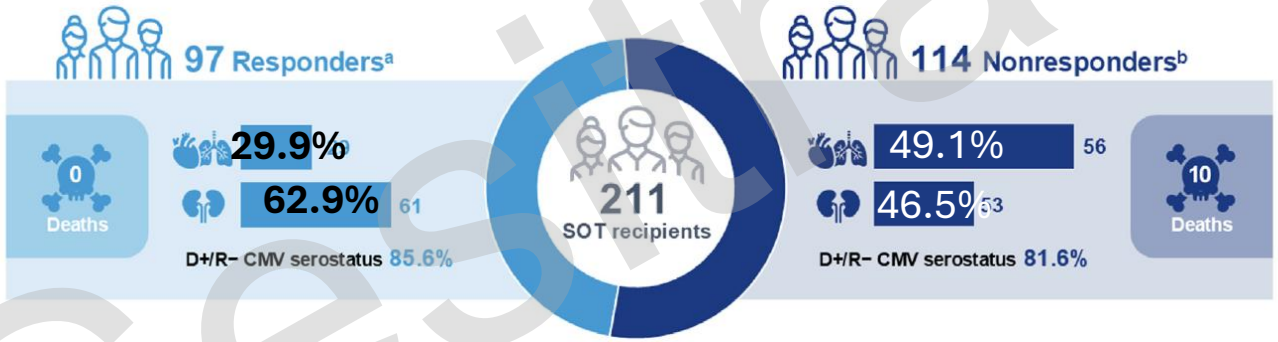
Association Between Cytomegalovirus Viremia Clearance and Post-Solid Organ Transplant Mortality in Patients With Refractory Cytomegalovirus Infection: SOLSTICE Post Hoc Analysis

Kamar M. et al. Transpl. Int. 38:15331.

SOLSTICE : SOT recipients with refractory CMV infection were randomized 2:1 to receive maribavir or IAT for 8 weeks.

Post hoc analysis assessed the impact of CMV clearance at Week 8 on mortality (all causes) at Week 20

- **Responders**: CMV clearance at week 8
- **Non responders**: no CMV viremia clearance wk 8 *or* who received maribavir rescue or alternative treatment



Median (range) time from treatment start to death: 30.5 (3–123) days.

3 IAT
7 maribavir

	Responders (n=97)	Non responders (n=114)
CMV DNA levels at randomization (n, %)		
Low (<9,100 IU/mL)	45 (46.4%)	42 (36.8%)
Intermediate (≥9,100 to <91,000 IU/mL)	39 (40.2%)	51 (44.7%)
High (≥91,000 IU/mL)	13 (13.4)	21 (18.4)
D+/R-	83 (85.6%)	93 (81.6)
Retransplant	8 (8.2%)	19 (16.7%)

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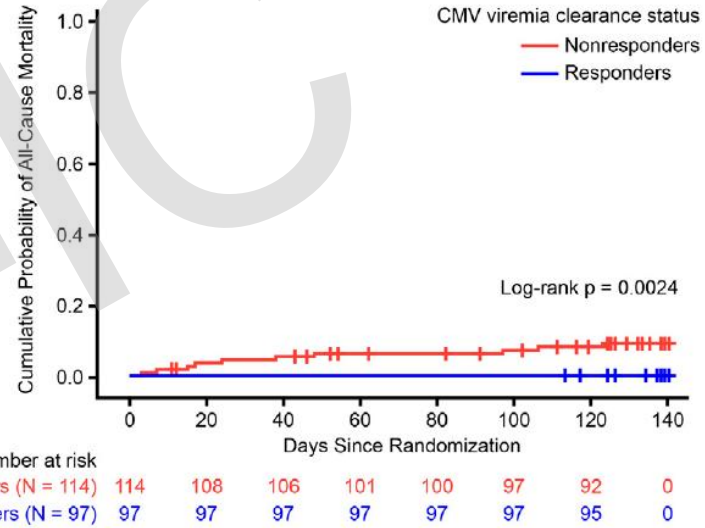
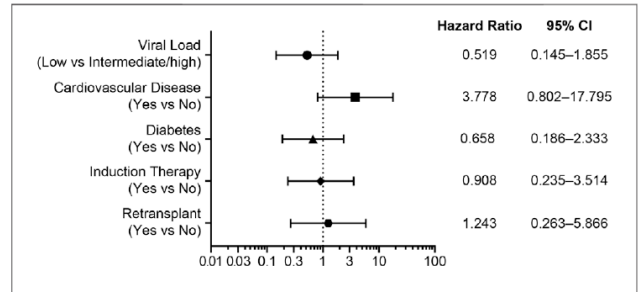
4 CMV- related

TABLE 4 | Patient characteristics of nonresponders who died.

SOT type	CMV serostatus, D/R	CV comorbidities	CMV syndrome	Viral load category[a]	Lymphocyte count at baseline[b]	Study drug	Length of Tx, days	Time from SOT to Tx start, days	Time from Tx start to death, days	Time from Tx end to death, days	Cause of death
Kidney	+/−	Y	N	I	0.1	GCV	8	279	38	30	CMV-related pneumonia
Lung	+/−	Y	N	L	1.1	FSC	16	165	17	1	Respiratory failure
Kidney	+/+	Y	N	H	0.2	FSC	34	253	106	72	Unknown[c]
Heart	−/+	Y	Y	L	0.8[d]	MBV	47	116	48	1	Cardiac arrest
Lung	+/−	N	Y	L	0.7	MBV	2	123	3	1	Deep vein thrombosis with probable progression to pulmonary embolus
Lung	+/−	Y	N	I	1.7	MBV	58	549	94	36	Respiratory failure
Kidney	+/−	N	Y	I	0.6	MBV	4	319	7	3	Drug-drug interaction with an outcome of sudden death[e]
Kidney	+/−	Y	N	I	0.1	MBV	8	253	23	15	Respiratory failure/CMV syndrome
Heart	+/−	Y	N	L	0.6	MBV	14	434	15	1	Massive pulmonary embolism
Heart	+/−	Y	N	I	0.9[f]	MBV	56	72	123	67	Extensive venous thrombosis





Achievement of viremia clearance at Week 8 was associated with a significantly reduced probability of mortality at Week 20.

CMV clearance at 8 weeks of treatment may be a marker of the patient's general health, disease severity, or immune status.

Letermovir Conversion for Cytomegalovirus Prophylaxis in Solid Organ Transplant

Amir S. et al. Clinical Transplantation, 2025; 39:e70366

Single-center, retrospective, descriptive cohort study at a large academic medical center (Houston Methodist Hospital) . Jan 17- Dec 23.

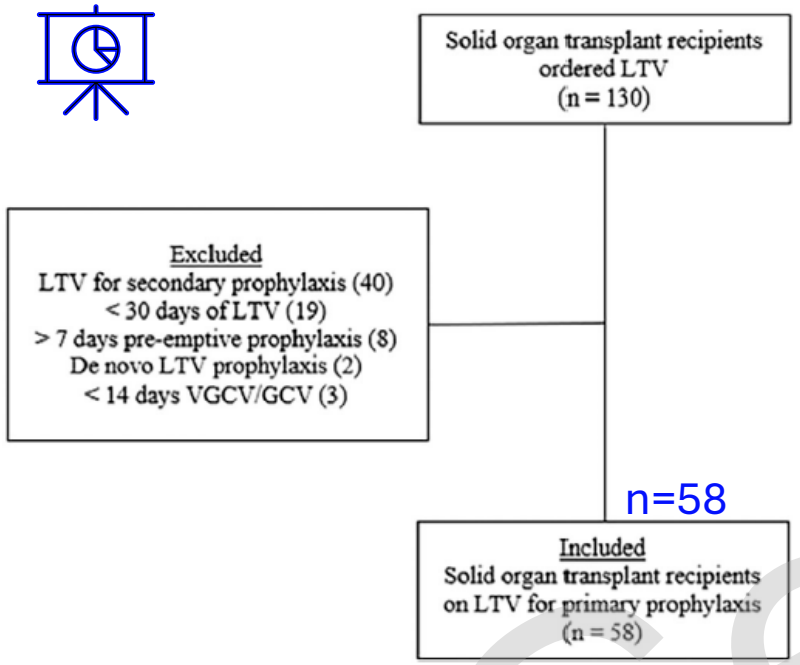
All patients >18 years or older who received a solid organ transplant and converted to letermovir for primary CMV prophylaxis from GCV or VGCV were included.

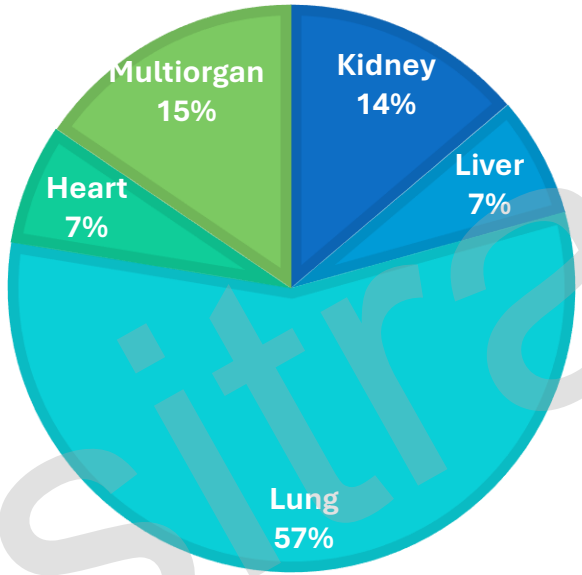
Assessing conversión to LTV from (val)ganciclovir for primary CMV prophylaxis.

- Change in white blood cell count from immediately prior to LTV conversion to 30 days post-initiation,
- Indications for switching to LTV
- Rates of breakthrough CMV infection.

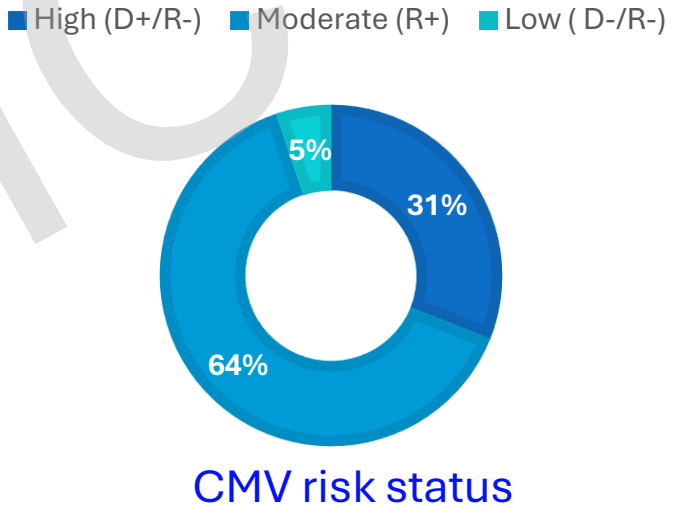
Letermovir Conversion for Cytomegalovirus Prophylaxis in Solid Organ Transplant

Amir S. et al. Clinical Transplantation, 2025; 39:e70366





Transplant type %



CMV risk status

Indications for letermovir	
Pancytopenia	26 (45)
Neutropenia	18 (31)
Leukopenia	7 (12)
Thrombocytopenia	7 (12)

	Days, median (IQR)
Time to letermovir initiation post-transplant,	116 (50, 187)
Duration of letermovir	132 (55, 275)

Letermovir Conversion for Cytomegalovirus Prophylaxis in Solid Organ Transplant

Amir S. et al. Clinical Transplantation, 2025; 39:e70366

Breakthrough CMV viremia on LTV

Case	Transplanted organ	Induction	CMV serologies (D/R)	Time to CMV infection from LTV initiation	Peak viral load (IU/mL)	CMV resistance panel drawn[a] (Y/N)	CMV treatment	Presence of end-organ disease (Y/N)	Time to CMV infection resolution	Secondary prophylaxis (Y/N), agent
1	Kidney	rATG	+/−	77 days	976	N	VGCV	N	58 days	N
2	Lung	IL2RA	+/−	147 days	3478	Y–no resistance	VGCV	N	49 days	Y, VGCV
3	Kidney	rATG	+/−	180 days	4471	N	VGCV	N	Ongoing treatment	N/A
4	Lung	IL2RA	+/+	155 days	15 6281	Y–no resistance	VGCV	N	74 days	Y, VGCV

6.8% Breakthrough CMV viremia

Post-LTV discontinuation CMV viremia

Case	Transplanted Organ	Induction	CMV serologies (D/R)	Time to CMV infection from LTV discon-tinuation	Peak viral load (IU/mL)	CMV resistance panel drawn[b] (Y/N)	CMV Treatment	Presence of end-organ disease (Y/N)	Time to CMV infection resolution	Secondary prophylaxis (Y/N), agent
1	Kidney	rATG	+/−	64 days	1 665 900	Y–no resistance	GCV	N (concern for hepatitis, no histopathologic evidence)	149 days	Y, VGCV
2	Lung	IL2RA	+/+	26 days	3208	N	VGCV	N	26 days	Y, VGCV
3	Lung	rATG	+/−	37 days	9907	N	VGCV	N	37 days	Y, VGCV
4	Lung	IL2RA	+/+	86 days	2427	N	VGCV	N	86 days	Y, VGCV
5	Kidney	IL2RA	+/−	38 days	5658	Y–no resistance	VGCV	N	38 days	Y, VGCV
6	Liver	Steroids	+/−	59 days	43 236	Y–no resistance	Maribavir	N	48 days	N
7	Lung	IL2RA	+/+	7 days	15 6381	Y–no resistance	VGCV	N	73 days	Y, VGCV

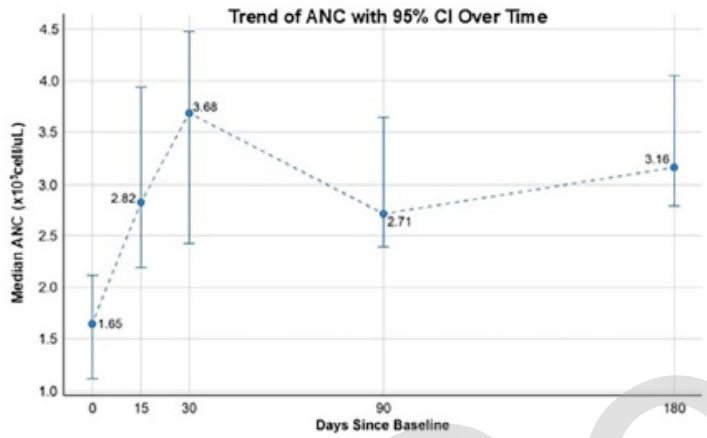
12% CMV infection within 80 post-LTV discontinuation

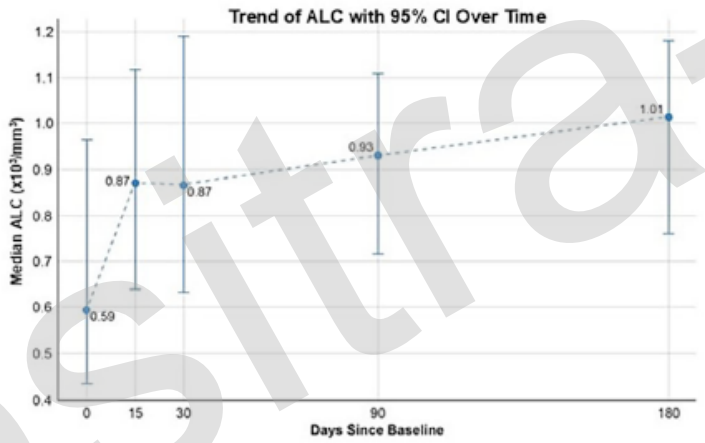
- no end-organ involvement
- no resistance.

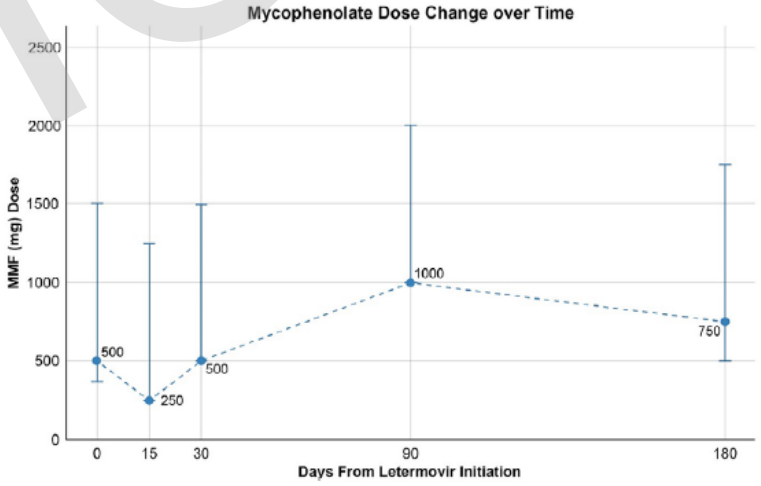
Letermovir Conversion for Cytomegalovirus Prophylaxis in Solid Organ Transplant

Amir S. et al. Clinical Transplantation, 2025; 39:e70366

- Improvements in leukopenia,
- Sustained mycophenolate dosing,
- Lower G-CSF use at 30 days post-conversion







LTV was effective and well tolerated for primary CMV prophylaxis in a diverse extra-renal transplant population. Potential role as a safe alternative in patients experiencing VGCV-associated hematologic toxicities

Small, retrospective, single-center descriptive cohort study
No medication adherence measures
Influence of other concomitants therapies in mielosupression

Letermovir should be first-line citomegalovirus prophylaxis in lung transplant recipients

Mezochow et al. American Journal of Transplantation 25 (2025) 908–915

Retrospective 7 studies of lung transplant recipients who were switched from VGCV to letermovir because of tolerability, dosing, or resistance

Study	Cohort	Sample size	LET duration (mo)	Impact of LET on leukopenia	CMV DNAemia/ breakthrough	Letermovir AEs	Insurance coverage	Limitations
Aryal et al, 2019, USA	LTRs with GCV/VGCV toxicity or resistant CMV	8 (75% CMV D+/R-)	6.5 (median)	NR	37.5% had LET discontinuation for DNAemia (1910-33392 IU/mL)	1 with fatigue, 1 with edema	NR	6 of 8 had previous CMV viremia
Singha et al, 2021, USA	LTRs with leukopenia on VGCV	17 (64.7% CMV D+/R-)	6.0 (median)	88.2% resolution of leukopenia; 86.7% reduced GCSF	47.1% had DNAemia; 2 LET discontinuation	No major side effects	NR	8 of 17 patients had previous breakthrough DNAemia on VGCV
Saullo et al, 2022, USA	LTRs with VGCV toxicity or resistant CMV	37 (51.2% CMV D+/R-)	9.4 (median)	Median WBC increase 1.4 109/L (P < .001)	35.7% had DNAemia; 1 LET discontinuation	5 (11.9%) stopped LET because of AE	4 (9.5%) stopped LET lack of insurance coverage	5 heart transplant recipients included in outcomes reports; LET used for secondary prophylaxis in 16 cases
Hirama et al, 2024, Japan	LTRs with VGCV toxicity or resistant CMV	7 (42.9% CMV D+/R-)	5.0 (median)	NR	14.3% had DNAemia	None	NR	4 of 7 had previous CMV viremia
Kleiboeker et al, 2024, USA	LTRs with leukopenia on VGCV	29 (27.6% CMV D+/R-)	5.6 (mean)	15 of 24 (62.5%) resolution of severe leukopenia; (50.0%) stop GCSF	3.4% on LET vs 5.7% on VGCV (P NS)	NR	NR	Did not track changes in maintenance immunosuppression after LET or rates of ACR
Martinez et al, 2024, USA	LTRs with leukopenia on VGCV (97.6%)	124 (31.5% CMV D+/R-	12.0 (median)	Median WBC increase 2.0 109/L (P < 0.001); 13 (10.5%) resumed or increased MMF; Improvement in neu, plat, and need GCSF	0.8% on LET vs 3.2% on VGCV (P .37)	2.4% (fatigue, leukopenia, hypotension); none requiring LET cessation	91 inadequate insurance coverage to initiate or to continue LET for >3 mo	Increased 1-y allcause mortality ([15.3%] vs [4.0%] in LET vs VGCV attributed to COVID-19 infections
Mezochow et al, 2024, USA	LTRs with leukopenia on VGCV (93.2%)	67 (38.6% CMV D+/R-)	16.6 (median)	Median WBC increase 2.6 109/L (P .019); 45.6% resumed cell cycle inhibitor; 63.3% stop GCSF	11.9% had DNAemia (47-2230 IU/mL); 4 required LET discontinuation	(1.5%) headache; (32.9%) CNI levels x 1.5 >target goal	21 (23.9%) inadequate insurance coverage	not track changes in ACR or CLAD among patients in the LET group who resumed maintenance immunosuppression

Letermovir should be first-line citomegalovirus prophylaxis in lung transplant recipients

Mezochow et al. American Journal of Transplantation 25 (2025) 908–915

High risk populations that may benefit from initial letermovir prophylaxis

Population	Estimated percentage of US lung transplant recipients	Considerations favoring letermovir for first-line CMV prophylaxis
CKD stage III or higher pretransplant	6%	↑ risk of AKI and variable renal function following transplant, leading to overdosing or underdosing of VGCV with associated toxicities and/or breakthrough CMV infection
Early posttransplant RRT, progressive CKD, or early AKI	52% (early AKI), 9% (early RRT), 33% (progressive CKD)	↑ risk for variable renal function, leading to overdosing or underdosing of VGCV - > associated toxicities and/or breakthrough CMV infection
Pretransplant desensitization and/or cytolytic induction immunosuppression	10%	↑ risk for hematologic toxicities from VGCV, including leukopenia leading to reduction in immunosuppression and/or increased risk for systemic infections
Telomere biology disorders	8%	↓ bone marrow reserve with ↑ risk for hematologic toxicities from VGCV in a population at risk of clinically significant CMV viremia
Age > 70 y	7%	↓ bone marrow reserve related to immunologic senescence with ↑ risk for hematologic toxicities from VGCV
Highly sensitized recipients (cPRA > 80%)	3%	↑ risk for humoral-mediated immune complications if cell cycle inhibitors are reduced or held because of VGCV-related hematologic toxicities

AKI, acute kidney injury; CKD, chronic kidney disease; CMV, cytomegalovirus; cPRA, calculated panel reactive antibody; RRT, renal replacement therapy; VGCV, valganciclovir.

Phase 2, Randomized, Double-blind, Placebo controlled Study of Fiztasovimab (NPC-21) for Kidney Transplant Recipients at High Risk of Cytomegalovirus Infection (LionHeart21).

Ichimaru N et al. Transplantation 2025;109: 985–993

Multicenter, randomized, double-blind, placebo-controlled, phase 2 study of NPC-21 for KT recipients with CMV (D+/R−)

Japan & US. Jul 20- Aug 22

Primary objective : Assess efficacy and safety of NPC-21 when administered prophylactically to CMV D+/R-

- 6 or 12 mg/kg NPC-21, or placebo, (4:1:4 ratio)
- D1 and WK 4, 8, and 12.

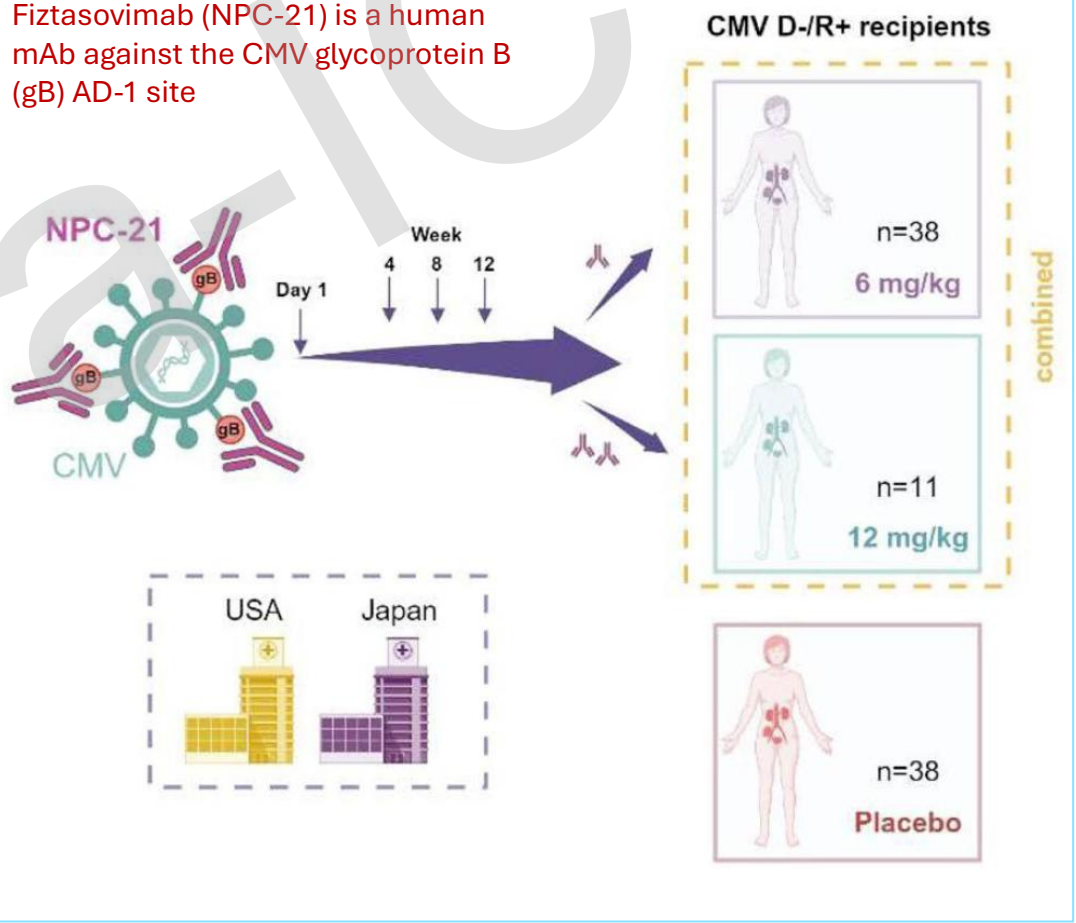
None of the recipients received anti-CMV medication as prophylaxis.

Primary efficacy endpoint: CMV infection* by week 16.

Secondary efficacy endpoints:

- % CMV infection and CMV disease by wk 28,
- time to CMV infection
- CMV viral load
- duration of the CMV-specific treatment

Fiztasovimab (NPC-21) is a human mAb against the CMV glycoprotein B (gB) AD-1 site



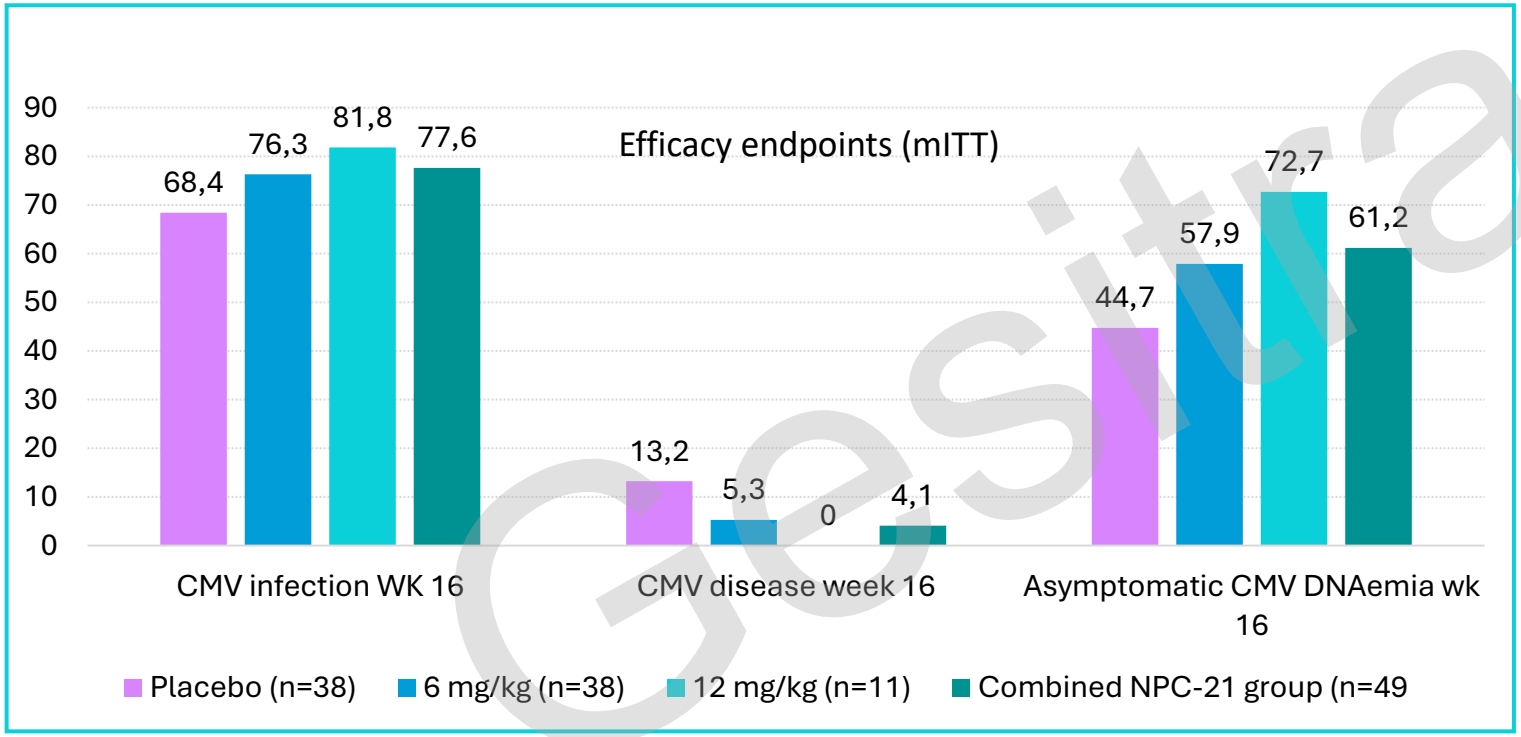
**CMV infection, defined as either CMV disease (CMV syndrome or tissue invasive CMV disease) or asymptomatic CMV DNAemia.*

LO MEJOR DE 2025 EN ... CMV TOS

Phase 2, Randomized, Double-blind, Placebo controlled Study of Fiztasovimab (NPC-21) for Kidney Transplant Recipients at High Risk of Cytomegalovirus Infection (LionHeart21).

Ichimaru N et al. Transplantation 2025;109: 985–993

Randomized 87 KT D+/R-. (38- 11- 38)
10 discontinued before wk 16 without evidence of CMV infection



Group	Median Days to First Detection of CMV DNA	Median CMV Viral Load (IU/mL; range)
6 mg/kg NPC-21	28.5	226.5 (110–3388)
12 mg/kg NPC-21	32.0	198.0 (105–589)
Placebo	31.0	371.5 (105–14 454)

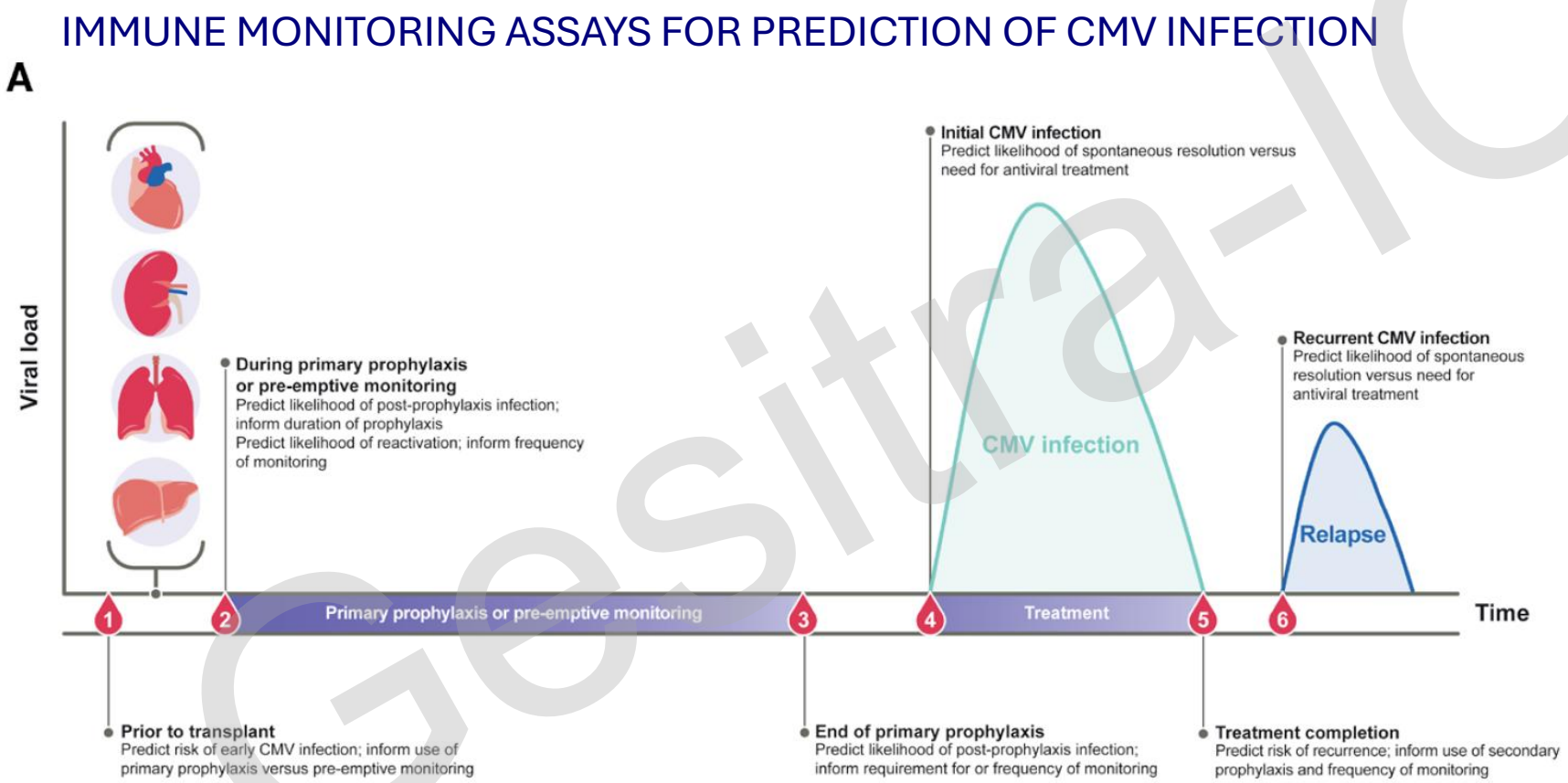
No significant adverse events were observed after NPC-21 administration

neutralizing activity at the AD-1 site of the gB viral envelope protein is not sufficient for significantly blocking the infection.

NPC-21 did not prevent CMV infection, with no significant reduction in CMV infection rates between treatment or placebo groups (77.5% versus 68.4%). Reduction in the occurrence of CMV disease (4.1% versus 13.2%).

Immune Monitoring Assays: Predicting Cytomegalovirus and Other Infections in Solid Organ Transplant Recipients

Gardiner BJ. Et al . Transplantation 2025 ; 10 9 (3): 395-398



6 key decision points where CMV-CMI assays have been studied

Key decision points for potential application of the CMV-CMI assay across the pretransplant and posttransplant period.

Cell-mediated Immunity to Guide Primary Prophylaxis for CMV Infection in Organ Transplant Recipients: A Multicenter Single-arm Prospective

Solera JT. Et al Transplantation 2025;109: 527–535

Assessed the Quantiferon-CMV (QTF-CMV) assay to guide CMV prophylaxis duration in high-risk SOTR.

Single-arm, multicenter, prospective interventional study. 10 transplant centers in North America

High-risk KT, PT, LiT and HT (D+/R–) or R+ with antithymocyte globulin (R+/ATG) induction.
CMV Prophylax: minimum of 3 mo antiviral prophylaxis; access to at least 6-mo supply of antiviral prophylaxis.

CMI testing - QTF-CMV assay at months 3, 4, 5, and 6 posttransplant.
Prophylaxis was discontinued for a positive CMI but continued for a negative result up to a maximum of 6 mo.
The **primary endpoint** was CMV viremia ≥1000 IU/mL up to 1 year posttransplant.

Resultado QTF-CMV	Acción	Monitorización de carga viral CMV	Criterio de inicio de tratamiento
Positivo	Suspender profilaxis	Cada 2 semanas durante 12 semanas (6 controles) o si aparecen síntomas	Iniciar tratamiento si carga viral >1000 IU/mL
Negativo	Continuar profilaxis hasta un máximo de 6 meses	Cada 2 semanas durante 12 semanas tras suspender profilaxis	Iniciar tratamiento si carga viral >1000 IU/mL

Cell-mediated Immunity to Guide Primary Prophylaxis for CMV Infection in Organ Transplant Recipients: A Multicenter Single-arm Prospective

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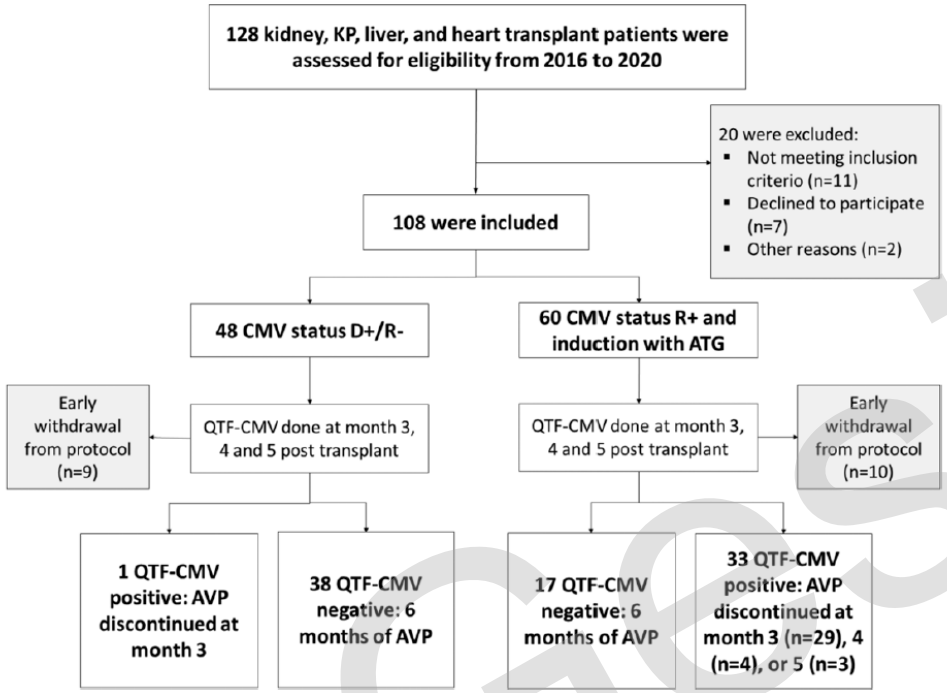

FIGURE 1. Flow diagram of the study. ATG, antithymocyte globulin; AVP, antiviral prophylaxis; CMV, cytomegalovirus; D+, donor CMV-seropositive; KP, kidney-pancreas; QTF, QuantiFERON; R+, recipient-seropositive; R−, recipient-seronegative.

Baseline characteristics of the groups based on the QTF-CMV result after transplantation (whole population; N = 108)

Estimators	QTF-CMV negative (N = 68)	QTF-CMV positive (N = 40)
Pretransplant CMV status		
CMV D+/R−	45 (66.2%)	3 (7.5%)
CMV R+	23 (33.8%)	37 (92.5%)
Age, y, median (IQR)	56 (45 to 63)	55.5 (42 to 64)
Sex, female, n (%)	23 (33.8%)	18 (45.0%)
Type of transplant, n (%)		
Kidney	56 (82.4%)	33 (82.5%)
Liver	6 (8.8%)	3 (7.5%)
Heart	2 (2.9%)	0
Other combined transplants[a]	4 (5.9%)	4 (10%)
Retransplant, n (%)	6 (8.8%)	7 (17.5%)
Immunosuppressant, n (%)		
Prednisone	66 (97.1%)	40 (100%)
Tacrolimus	67 (98.5%)	39 (97.5%)
Cyclosporine	0	1 (2.5%)
Mycophenolate	66 (95.6%)	37 (92.5%)
Azathioprine	1 (1.5%)	2 (5.0%)
Sirolimus	3 (4.4%)	1 (2.5%)

Per protocol CMV D+/R– (N = 39)
CMV R+ and ATG induction (N = 50)

Cell-mediated Immunity to Guide Primary Prophylaxis for CMV Infection in Organ Transplant Recipients: A Multicenter Single-arm Prospective

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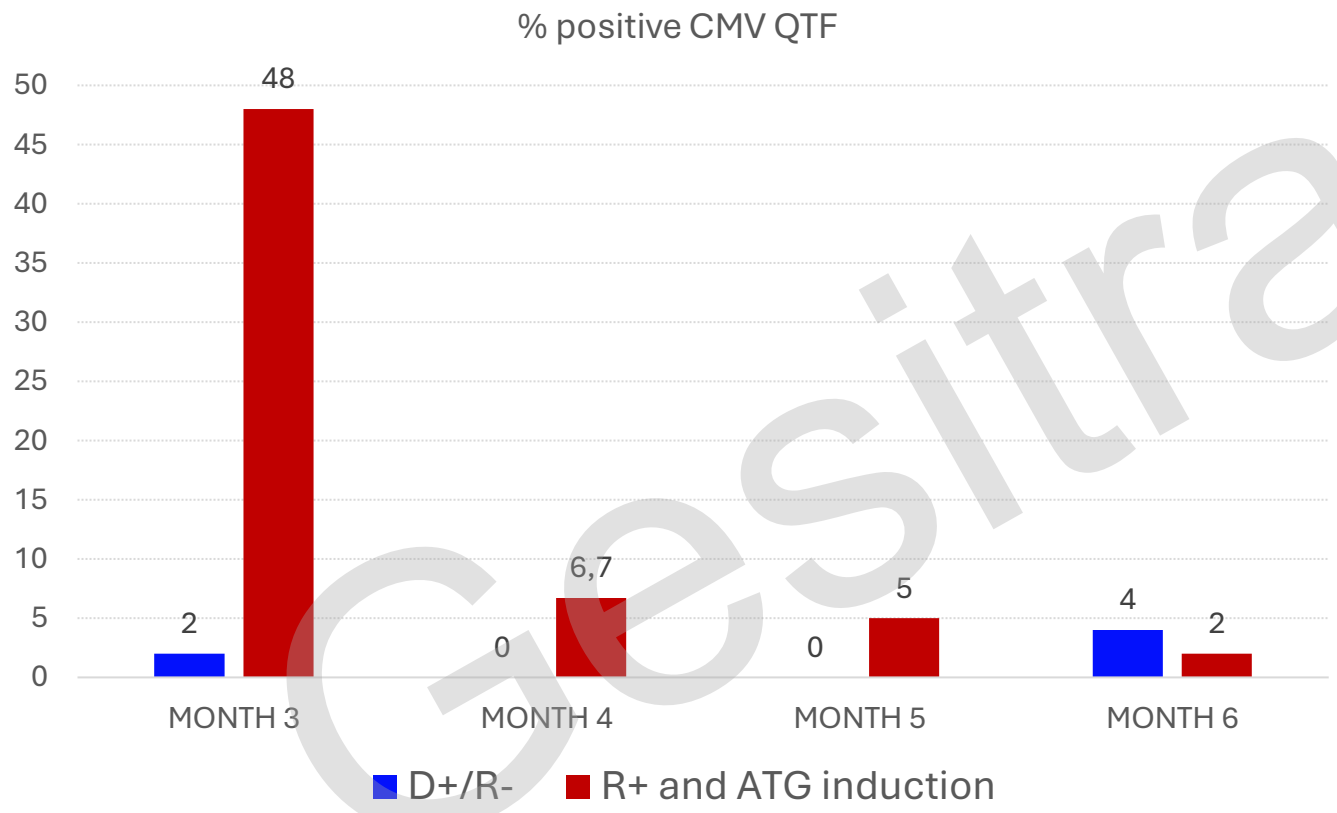


Recipient serostatus is a key factor CMV seronegative patients who lack immunity before transplant but receive a CMV-infected organ (D+/R–) likely to remain CMV-CMI negative until after prophylaxis discontinuation

Cell-mediated Immunity to Guide Primary Prophylaxis for CMV Infection in Organ Transplant Recipients: A Multicenter Single-arm Prospective

Solera JT. Et al Transplantation 2025;109: 527–535

Outcomes by QTF-CMV result (per-protocol population; N = 89)

Outcomes	QTF-CMV negative (N = 55), n (%)	QTF-CMV positive (N = 34), n (%)	P[a]
CMV viremia (any)	32 (58.2%)	18 (52.9%)	0.66
CMV viremia (>1000 IU/mL)	21 (38.2%)	4 (11.8%)	0.008
CMV disease	5 (9.1%)	0	0.15
Biopsy-proven rejection	2 (3.6%)	0	0.52
All-cause hospitalization	7 (12.7%)	6 (17.6%)	0.55
All-cause mortality	0	0	1.00
Valganciclovir adverse events			
Leukopenia	7 (12.7%)	7 (20.6%)	0.38
Neutropenia	3 (5.5%)	4 (11.8%)	0.42
Anemia	3 (5.5%)	1 (2.9%)	1.00
Thrombocytopenia	1 (1.8%)	0	1.00

D+/R–

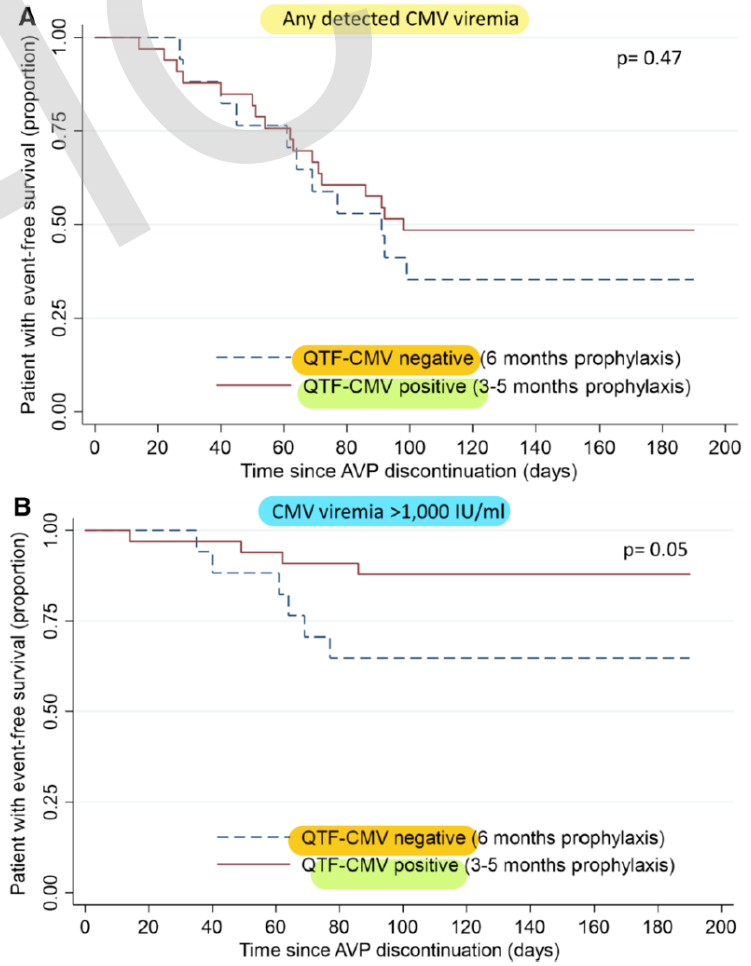
[a]Continuous variables *P* value estimated using the Mann-Whitney *U* test (Wilcoxon rank-sum test). Categorical variables *P* value estimated using the Fisher exact test or the chi-square test.
CMV, cytomegalovirus; IQR, interquartile range; QTF, QuantiFERON.

Significantly lower incidence of clinically significant CMV viremia (>1000 IU/mL) in the R+/ATG group that was QTF-CMV positive

Use of QTF-CMV testing to help guide the duration of antiviral prophylaxis in selected subgroups of patients, specifically the **R+/ATG subgroup**.

CMI assay had **less utility in the D+/R–** subgroup of patients.

R+/ATG group (n=50)



Survival analysis of the rate of CMV viremia in R+ patients with ATG induction by the QTF-CMV result and the time of prophylaxis (per-protocol R+ population; n = 50

Cytomegalovirus-Specific Cell-Mediated Immunity for Prediction of Postprophylaxis CMV Disease in a Phase 3 Trial of Letermovir Versus Valganciclovir Prophylaxis in Donor CMV-Seropositive/Recipient CMV-Seronegative

Limaye et al. Clin Infect Dis . Published: 01 December 2025. Corrected and typeset: 23 January 2026

- Evolution of CMV-CMI posttransplant
- Clinical utility of QFT-CMV for the prediction of post-prophylaxis CMV disease in CMV (D+R− KTRs).

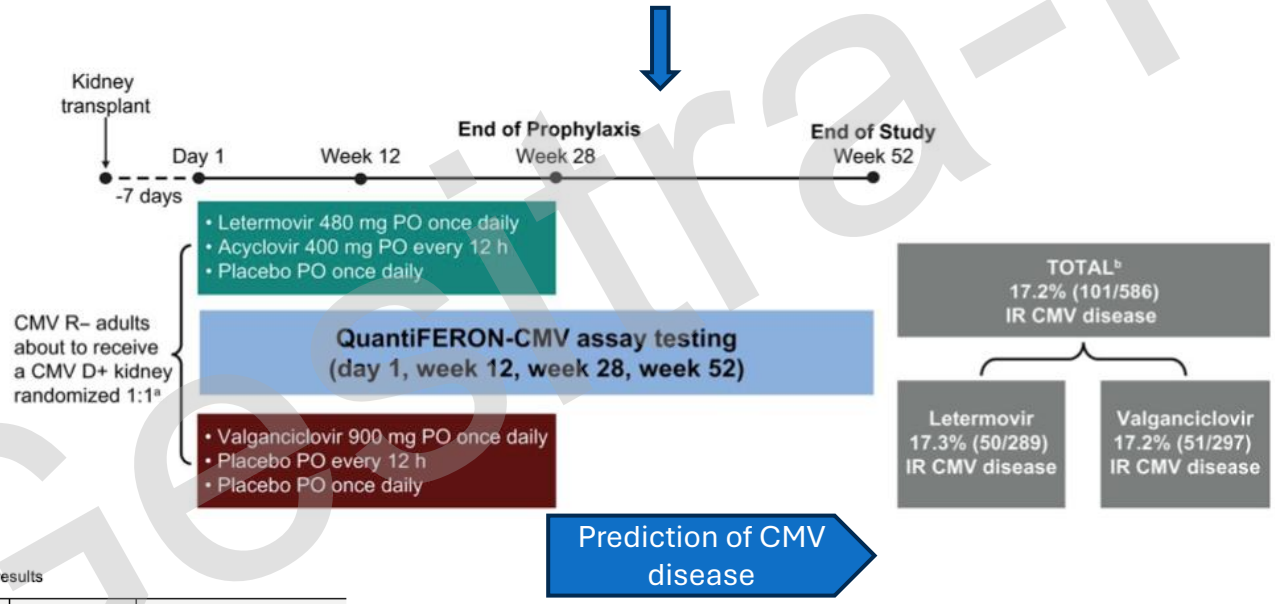


Table S2. Interpretation of QuantiFERON-CMV assay results

Nil (IU/mL)	CMV minus Nil (IU/mL)	Mitogen minus Nil (IU/mL)[a]	QuantiFERON-CMV assay result	Interpretation
≤8.0	≥0.2 and ≥25% Nil	Any	Reactive[b]	**POSITIVE** – CMV-CMI detected
	<0.2 OR ≥0.2 and <25% Nil	≥0.5	Nonreactive	**NEGATIVE** – CMV-CMI not detected
		<0.5	Indeterminate[c]	**INDETERMINATE** for CMV-CMI
>8.0[d]	Any	Any		

Cytomegalovirus-Specific Cell-Mediated Immunity for Prediction of Postprophylaxis CMV Disease in a Phase 3 Trial of Letermovir Versus Valganciclovir Prophylaxis in Donor CMV-Seropositive/Recipient CMV-Seronegative

Limaye et al. Clin Infect Dis . Published: 01 December 2025. Corrected and typeset: 23 January 2026

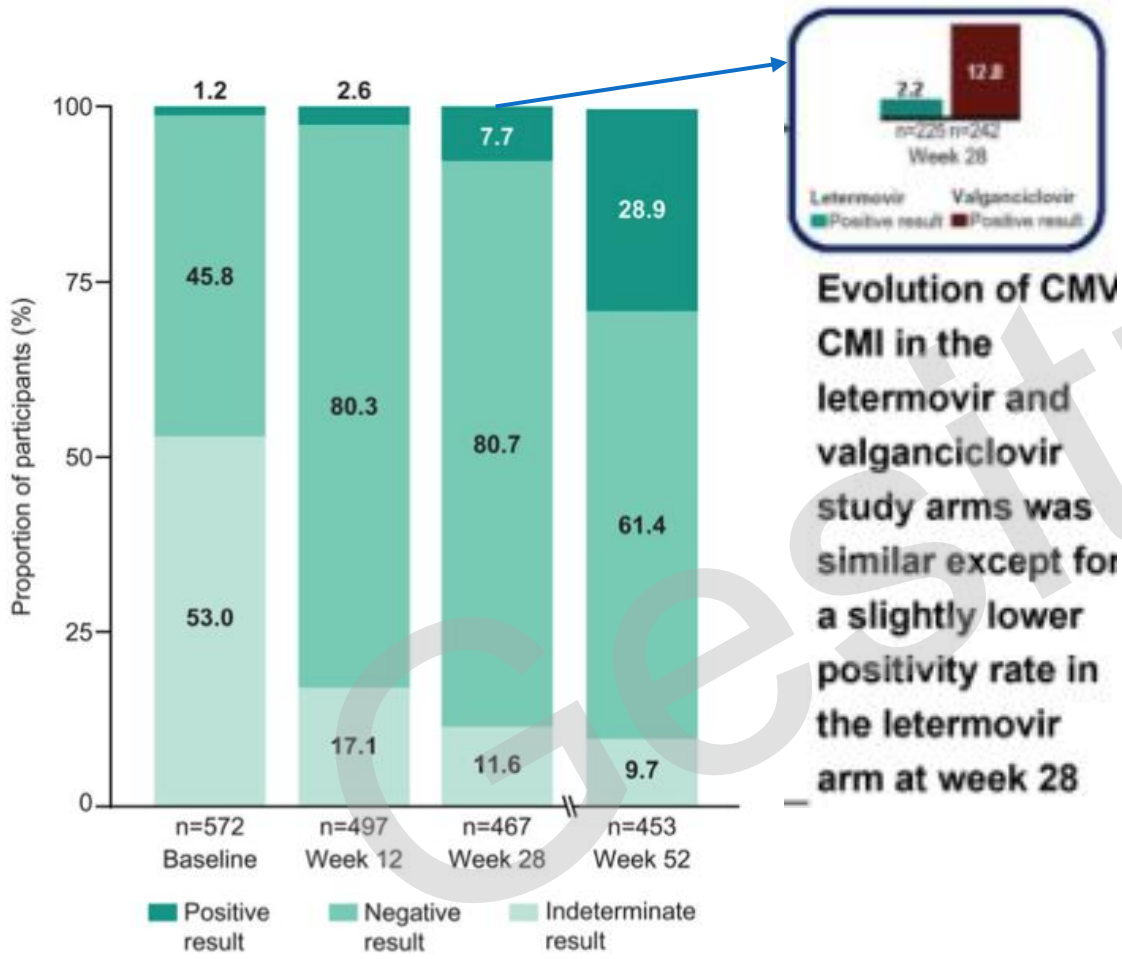


Figure 3. QuantiFERON-CMV results over time in the total population.

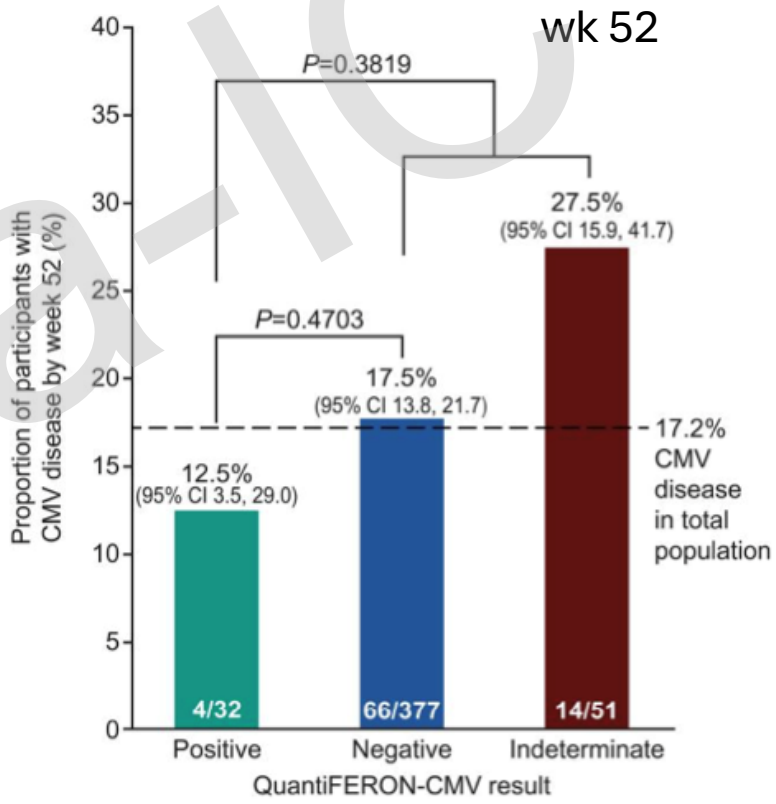


Figure 5. QuantiFERON-CMV assay results at week 28 in the total population and investigator-reported postprophylaxis CMV disease by week 52. Chi square test with two-tailed *P*-value for positive versus negative results and positive versus pooled negative and indeterminate results.

Cytomegalovirus-Specific Cell-Mediated Immunity for Prediction of Postprophylaxis CMV Disease in a Phase 3 Trial of Letermovir Versus Valganciclovir Prophylaxis in Donor CMV-Seropositive/Recipient CMV-Seronegative

Limaye et al. Clin Infect Dis . Published: 01 December 2025. Corrected and typeset: 23 January 2026

B. Positive versus pooled negative and indeterminate QFT-CMV results in the total population

CMV event by week 52	QuantiFERON-CMV result at week 52	
	Positive (n=131)	Negative & Indeterminate (n=322)
Developed post-prophylaxis CMV disease (n=91)	47	44
Did NOT develop post-prophylaxis CMV disease (n=362)	84	278
Had qCMV DNAemia (n=185)	103	82
Did NOT have qCMV DNAemia (n=268)	28	240
Developed post-prophylaxis CMV disease AND/OR qCMV DNAemia (n=192)	106	86
Did NOT develop post-prophylaxis CMV disease and NO qCMV DNAemia (n=261)	25	236

Central CMV DNA testing. Investigator-reported CMV disease.
Participants who developed CMV disease prior to week 28 were included.
q, quantifiable.

	POSITIVE VS POOLED NEGATIVE AND INDETERMINATE RESULTS		
	LETERMOVIR	**VALGANCICLOVIR**	**TOTAL**
Sensitivity, % (95% CI)	2.2 (0.7, 4.4)	12.2 (7.7, 16.8)	7.4 (4.8, 10.1)
Specificity, % (95% CI)	97.7 (93.3, 100.0)	92.5 (84.3, 100.0)	95.2 (90.7, 99.8)
PPV, % (95% CI)	80.0 (45.0, 100.0)	88.9 (77.0, 100.0)	87.5 (76.0, 99.09
NPV, % (95% CI)	19.6 (14.4, 24.9)	17.7 (12.5, 22.9)	18.7 815.0, 22.4)

QUANTIFERON-CMV assay performance at week 28 in the LTV and VGCV arms for prediction of investigator- reported post prophylaxis CMV disease by week 52

Based on the results of the study, the Quantiferon-CMV result at the end of prophylaxis has limited clinical utility to predict post-prophylaxis CMV disease in CMV D+R- KTRs

Impact of kidney function on 200 days of antiviral prophylaxis for cytomegalovirus disease in cytomegalovirus-seronegative recipients of cytomegalovirus-seropositive donor kidneys: Post hoc analysis of a randomized, phase 3 trial of letermovir vs valganciclovir

Budde K et al. American Journal of Transplantation 25 (2025): 2621–2633

Post hoc assess the impact of kidney function on 200 days of cytomegalovirus (CMV) prophylaxis in CMV donor-positive/recipient-negative (D+R-) KTRs - **NCT03443869**

Randomized (1:1) posttransplant to **letermovir 480 mg** (with ACV or VGCV placebo) or **valganciclovir 900 mg** (with acyclovir and letermovir placebos) daily for 28 weeks.

Valganciclovir and acyclovir doses were modified for kidney function ([CrCl]).

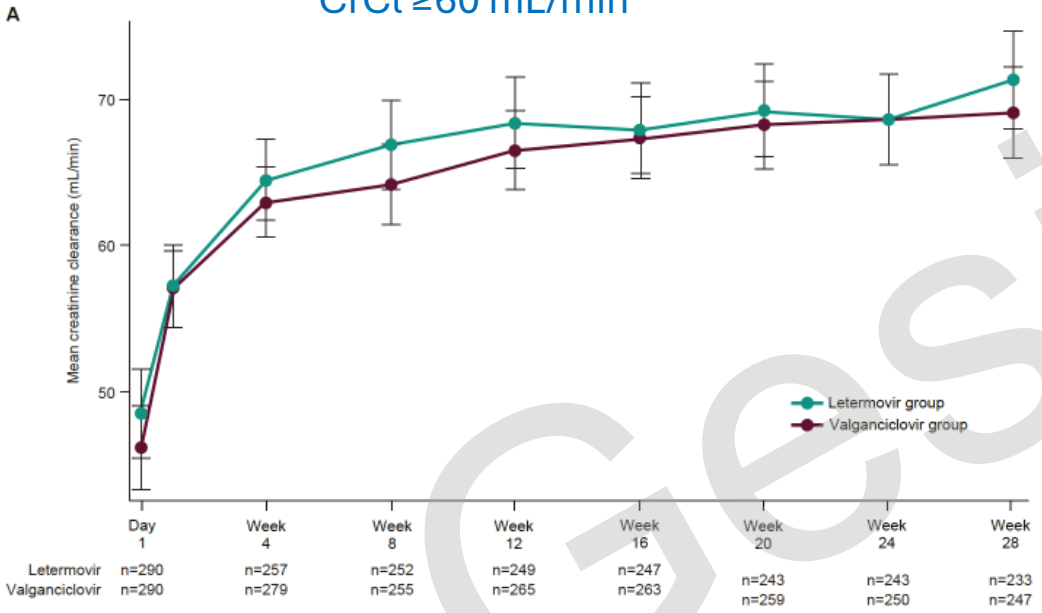
Dose frequency, adherence, CMV DNAemia, and CMV prophylaxis discontinuations were evaluated at week 28.

Impact of kidney function on 200 days of antiviral prophylaxis for cytomegalovirus disease in cytomegalovirus-seronegative recipients of cytomegalovirus-seropositive donor kidneys: Post hoc analysis of a randomized, phase 3 trial of letermovir vs valganciclovir

Budde K et al. American Journal of Transplantation 25 (2025): 2621–2633

A total of 480 CMV D+R- KTRs had a median CrCl of 67 mL/min.

At the end ≅60% in both groups had a CrCl ≥60 mL/min



Mean creatinine clearance through week 28.
Error bars represent 95% CI

Adherence

% participants

100% 49.8% 52%

	Once daily dosing LTV vs LTV plac		Once daily dosing VGCV vs VGCVplac		Intermittent dosing VGCV vs VGCVplac	
Median adherence to active CMV antiviral (%)	100		100		95.1	
No. (%) of participants with 100% adherence	145 (62.2)		82 (66.7)		0 (0.0)	
No. (%) of participants with ≥90% to <100% adherence	87 (37.3)		37 (30.1)		77 (62.1)	
No. (%) of participants with ≥75% to <90% adherence	1 (0.4)		3 (2.4)		25 (20.2)	
No. (%) of participants with <75% adherence	0 (0.0)		1 (0.8)		22 (17.7)	

Intermittent valganciclovir had a lower median adherence compared with participants who received once daily valganciclovir (95.1% vs 100%).
lowest median adherence first quartile (⩽ 52 ml/min

Impact of kidney function on 200 days of antiviral prophylaxis for cytomegalovirus disease in cytomegalovirus-seronegative recipients of cytomegalovirus-seropositive donor kidneys: Post hoc analysis of a randomized, phase 3 trial of letermovir vs valganciclovir

Budde K et al. American Journal of Transplantation 25 (2025): 2621–2633

	LETERMOVIR GROUP (n=233)		VALGANCICLOVIR group (n= 247)	
CrCl quartile at week 28 (mL/min)	Letermovir group	**Letermovir group**: No. pts with CrCl ≤67 vs >67 n/m (%) (95% CI)	Valganciclovir group	**Valganciclovir group**: No. pts with CrCl ≤67 vs >67 n/m (%) (95% CI)
No. pts with qCMV DNAemia				
0-≤52	2	2/117 (1.7%) (0.2-6.0)	9	17/130 (13.1%) (7.8-20.1)
>52-≤67	0		8	
>67-≤85	2	3/116 (2.6%) (0.5-7.4)	1	5/117 (4.3%) (1.4-6.7)
>85	1		4	
With breakthrough quantifiable CMV DNAemia through week 28				
0-≤52	0	1/117 (0.9%) (0.02-4.7)	5	10/130 (7.7%) (3.8-13.7)
>52-≤67	1		5	
>67-≤85	1	1/116 (0.9%) (0.02-4.7)	1	4/117 (3.4%) (0.9-8.5)
>85	0		3	

In CMV D+R- KTRs, letermovir prophylaxis was associated with less CMV DNAemia compared with valganciclovir in participants with low kidney function during the 200-day prophylaxis period

LTV-> Higher adherence overall to the active CMV antiviral, lower rates of quantifiable CMV DNAemia, including breakthrough, and fewer prophylaxis discontinuations.

Hospital Acquired Infections Among Solid Organ Transplant Recipients Hospitalized in Intensive Care Unit (2018–2024): A Study of the GiViTI

Genovese C. et al. Transplant Infectious Disease, 2025; 27:e70120

Describing the epidemiology, clinical characteristics, and outcomes of patients who developed an ICU-acquired infection following a SOT procedure.

Multicenter, retrospective study . Italian PROSAFE Project. 31 Italian ICUs. 2018- 2024.

Inclusion criteria: All adult patients admitted to ICU during the same hospitalization as their organ transplant procedure .

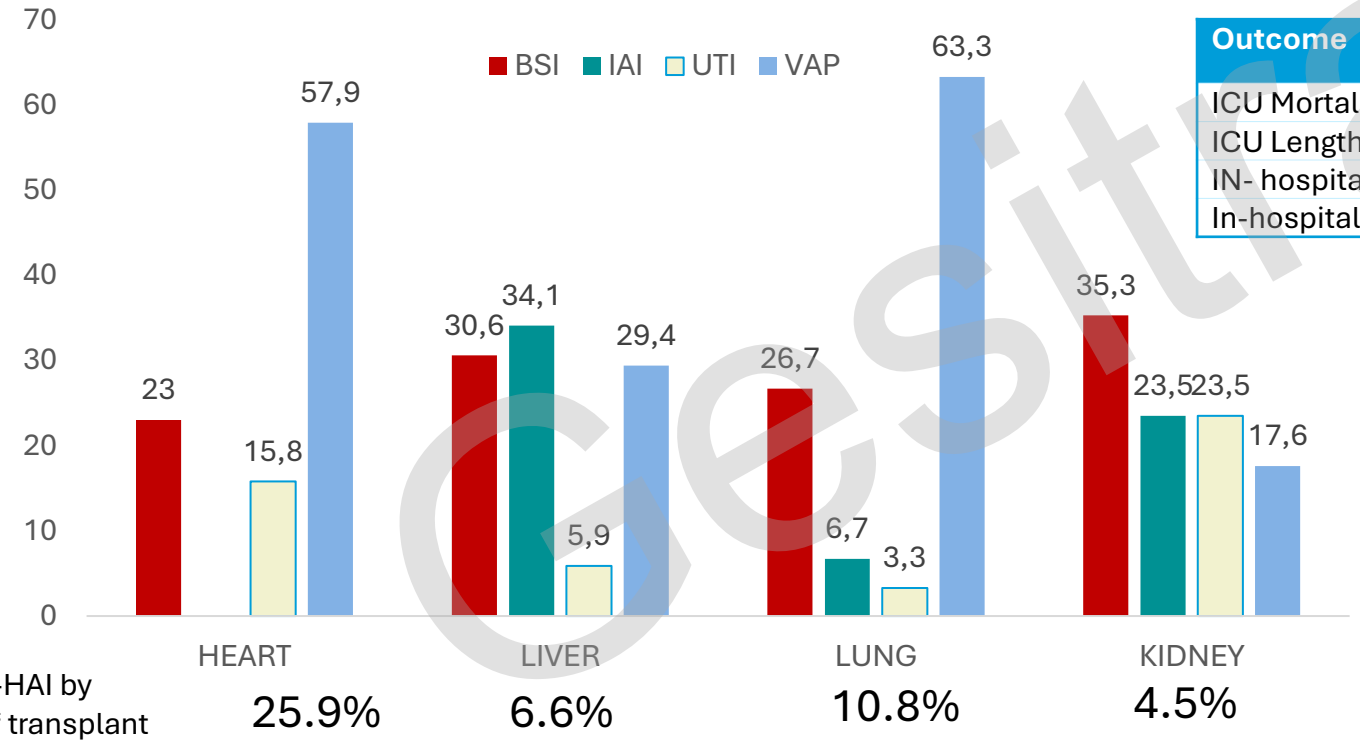
Hospital-acquired infections occurring more than 48 h after ICU admission:

- Bloodstream infections
- Ventilator associated pneumonia
- Intra-abdominal infections
- Urinary tract infections

Hospital Acquired Infections Among Solid Organ Transplant Recipients Hospitalized in Intensive Care Unit (2018–2024): A Study of the GiViTI

Genovese C. et al. Transplant Infectious Disease, 2025; 27:e70120

- TX: 3720. Included 2210 (59.4%) > 48h in ICU.
- 193 ICU-HAI by 154 SOT recipients (6.9% of all SOT).
- Median time ICU-HAI from ICU admission: 6 d (IQR 4, 14) Median time ICU-HAI from SOT: 6 d (IQR 3, 10)
- VAP (74, 38.3%), BSI (56, 29%), IAI (46, 23.8%), and UTI (17, 8.8%).



% ICU-HAI by type of transplant

25.9% 6.6% 10.8% 4.5%

Outcome	All ICU admitted (n= 2210)	ICU HAI (n = 154)
ICU Mortality (n, %)	3.8%	22.7%
ICU Length of stay (median, IQR)	4 (2.0, 7.0)	24.0 (14.0, 41.5)
IN- hospital Mortality (n, %)	2.1 %	7.0 %
In-hospital Length of stay (median, IQR)	22.0 (14.0, 40.0)	56.0 (34.5, 85.0)

MORTALIDAD X10

GNB: *Klebsiella* spp. and *Pseudomonas* spp.
GPC: *E. faecium* and CoNS

39% MDRO infections
CR-Klebsiella spp.(34%)
VR E.faecium (56%)

Impact of Vancomycin-Resistant Enterococci (VRE)–Active Perioperative Prophylaxis in Liver Transplant Patients Colonized by VRE

Burastero et al. Clinical Infectious Disease, 2025

In LT population the prevalence of VRE pre-transplant colonization varies from 13% to 44%, with 6.7 and 3.65-fold higher risk of VRE-infection and all-cause mortality at 1 year post-transplantation in VRE carriers.

Analyze effectiveness of vancomycin-resistant *Enterococci* (VRE)–active prophylaxis for preventing early post–liver transplantation (LT) VRE infections in VRE-colonized patients

Retrospective, observational, multicenter study (Italia x2 , UK). Consecutive LTX VRE- colonized. (2010-2023)

Incidence of early-onset (30 days) VRE infections was compared between patients who received active prophylaxis for VRE and those who did not.

- VRE BSI
- VRE superficial surgical site infections (SpSIs)
- Deep surgical site infections (DSIs).

Impact of Vancomycin-Resistant Enterococci (VRE)–Active Perioperative Prophylaxis in Liver Transplant Patients Colonized by VRE

Burastero et al. Clinical Infectious Disease, 2025

LT standard antibiotic prophylaxis
CEF3 + ampicillin for 48 hours.
RFH, cefotaxime + metronidazole for 24 hours; + teicoplanin for MRSA
VRE-active prophylaxis
tigecycline or linezolid or daptomycin 10 mg/kg per day, all for 48 hours.

69 patients received VRE active prophylaxis
62 patients received non-VRE active prophylaxis

33.6% patients were pre-LT colonized by an MDR pathogen different from VRE.

Early VRE infections : VRE-active and non–VRE-active groups (8.7% vs 12.9%; *P* = .621).- **no difference**
Any early pathogen infection: VRE-active 15.9% and VRE non-active 32.2% (*P* = .047).

Factors associated with VRE infection. Multivariate analysis

- Intensive care unit days
- prolonged mechanical ventilation
- reoperation

- VRE-active prophylaxis in VRE-colonized patients at LT is not effective.
- Use of tigecycline was associated with a lower risk of early infection due to any pathogen.
- Targeted prophylaxis against VRE in patients colonized by this pathogen and undergoing LT should not be recommended.

Donor-derived bartonellosis in solid organ transplant recipients from unhoused donors in Alberta

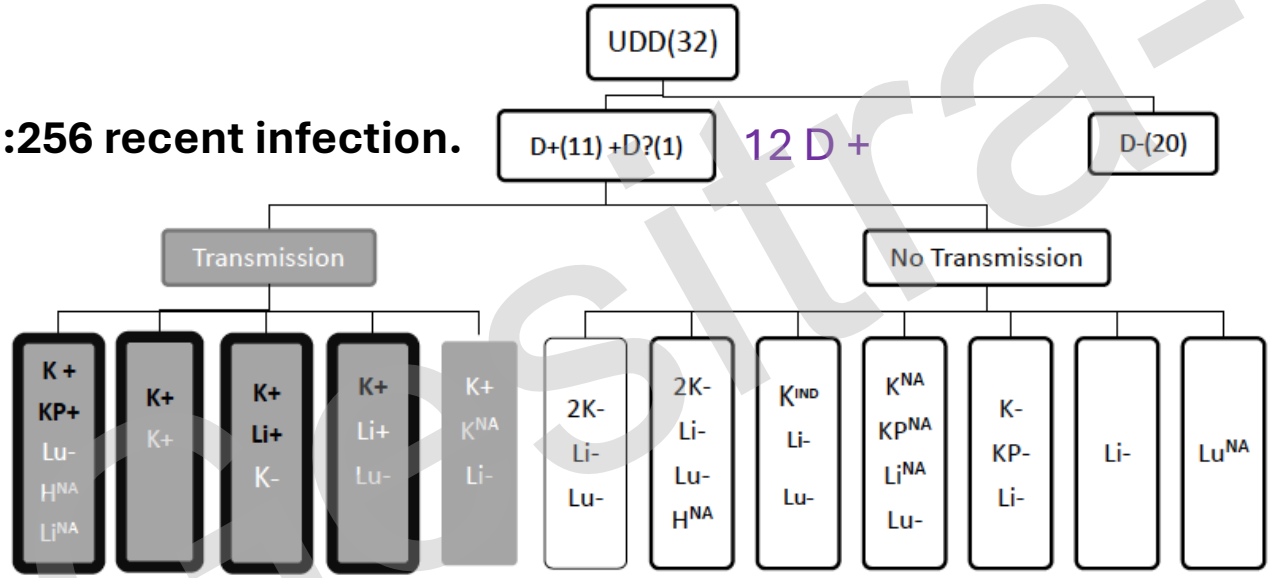
Kabani et al. American Journal of Transplantation 25 (2025) 417–423

- *In 2022, 3 SOT recipients that received an organ from an unhoused deceased donor (UDD) developed bartonellosis secondary to B quintana. Alberta, Health Canada.*
- *Bartonella* serology screening on stored samples from UDDs starting in January 2022 and prospectively on any UDDs at time of organ procurement.

Titers IgG > 1:256 recent infection.

Attack rate :12.5%,

37 R



Total receptores	Serología negativa y asintomáticos	Sin serología ni BA	Infección sintomática	Serología positiva asintomáticos	Serología indeterminada
37	19 (22%)	8 (32%)	6 (16%)	3 (8%)	1 (3%)

37 recipients (Kidney [14], Liver [10], Lung [7], Kidney-Pancreas [4], Heart [2]) received organs from 12 donors.

Donor-derived bartonellosis in solid organ transplant recipients from unhoused donors in Alberta

Kabani et al. American Journal of Transplantation 25 (2025) 417–423

Six SOT recipients developed probable donor-derived B quintana infection from 4 donors

Donor-derived infection : KTR (4/14, 29%); KPTR (1/4, 25%), LiTR (1/10,10%)

- skin lesions (single to multiple nodular lesions +/- oral mucosal involvement
- Fever (50%) and mialgias (50%)
- Median time (tx to presentation): 5.5 months (2-10 mo)
- DX: Positive PCR skin (100%). PCR blood: 2+/6
- Treatment: Doxicicline (3-4.5 months)

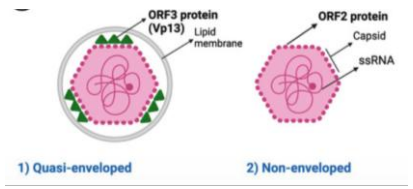
Figure 2. Skin manifestation of solid organ transplant recipients with donor-derived bartonellosis.

- Benefit in screening donors with history
- of being unhoused and drug use in areas with known high disease seroprevalence ?
- Universal prophylaxis for recipients of seropositive donors?

Updates on Donor-Derived Infection in Solid Organ Transplantation, Report from the 2024 GTI (Infection and Transplantation Group) Annual

Eldin C et al. Transpl. Int. 2025 38:14237.

Genotypes 1 and 2 (G1 and G2) are strictly human, of orofecal transmission, G3 & 4 are a zoonosis.
Chronic HEV is defined by replication beyond 3 months after infection.
In case of **HEV infection in SOT**, around **two-thirds** developed **chronic hepatitis**.



In France, HEV RNA is screened in donors' sera

Systematic screening has been implemented in the UK

HEV incidence in organs of deceased donors is 0.94 per 1,000 (x 4 higher than in their blood)

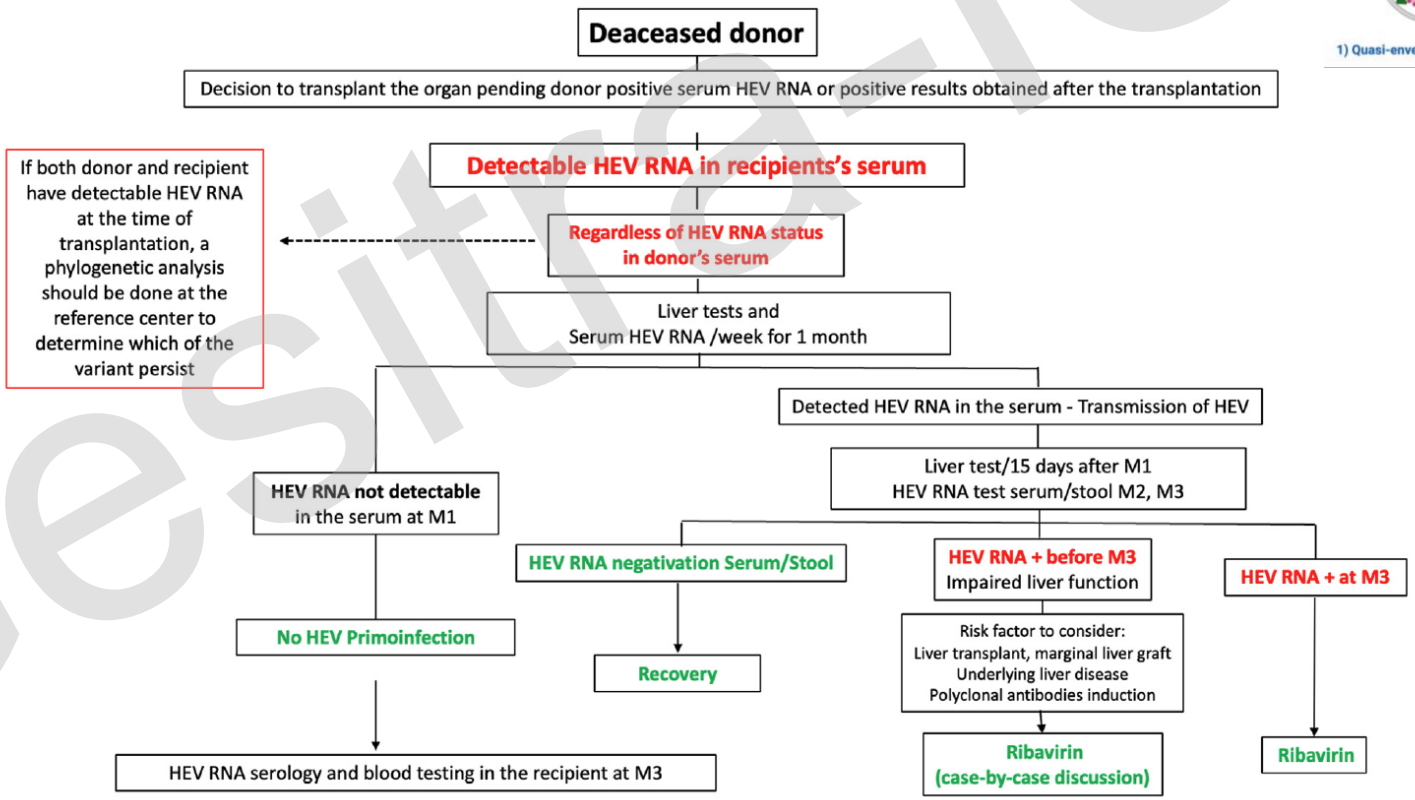


FIGURE 1 | Recommendations in France for cases where HEV RNA is detected in the recipient's blood following transplantation from a HEV-positive deceased organ donor

Hepatitis E virus screening in solid organ transplant recipients: prevalence and implications for implementation, Spain, 2021 to 2023

Pereira S et al. Euro Surveill. 2025;30(44):pii=2500254.

Determine the prevalence of HEV viraemia and to evaluate the clinical evolution of HEV infection in SOT.

Multicentre cross-sectional study including adult SOT recipients under follow-up in Spain. (2021-2023). Promoted by GEHEP –SEIMC.

Prospectively tested for HEV RNA in peripheral blood. If detectable viraemia - > followed up every 3 months to evaluate viral persistence.

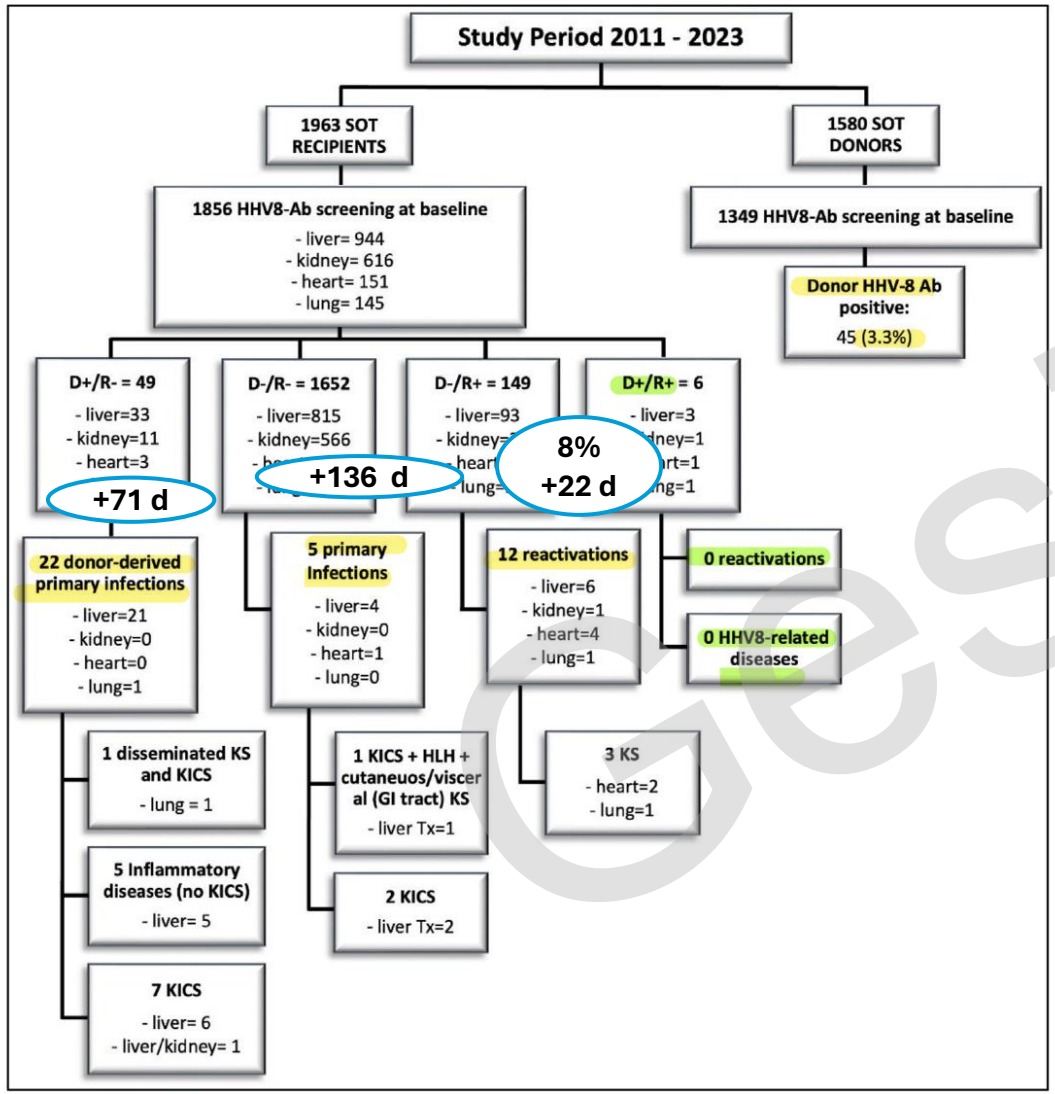
940 patients included. Five patients were infected. Liver enzimes were normal. 3/5 - > HEV chronic infection.

Prevalence of HEV infection IN SOTR:**0.53%** (95% confidence interval: 0.23–1.24).
Prevalence of chronic HEV infection IN SOTR: **0.32%.**

Support the implementation of a spanish national HEV screening programme to enable early detection, timely treatment and improved patient outcomes

Serologic screening and molecular surveillance of Kaposi sarcoma herpesvirus/human herpesvirus-8 infections for early recognition and effective treatment of Kaposi sarcoma herpesvirus-associated inflammatory cytokine syndrome in solid organ transplant

Mularoni A et al. American Journal of Transplantation 25 (2025) 1070–1085.

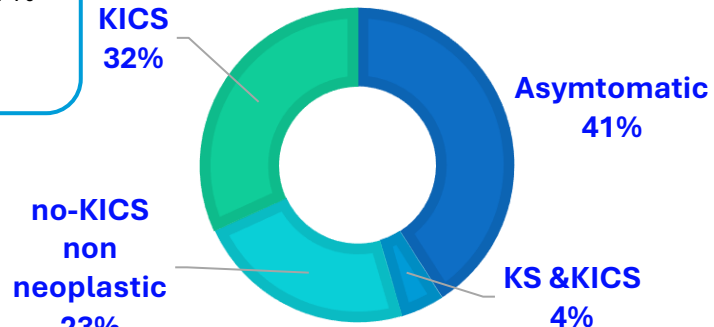


Retrospective cohort study was conducted at ISMETT, SOT center performing LT, LiT, HT, KT, PT. Palermo, Italy .

All consecutive patients who underwent SOT from 2011 to 2023 were included.

Time Tx – KICS: 85 d (52-112)
Attributable death/ patients with KICS : **57**%
Death KICS treated anti CD20: 0%
Death KICS non treated antiCD20: 100%

HHV-8 D+/R- PRIMARY INFECTION



n= 22

Switch to mTOR inhibitors (68%)
Antiviral therapy (55%)
Anti-CD20 therapy/patients with KICS (71.4%)

Serologic screening and molecular surveillance of Kaposi sarcoma herpesvirus/human herpesvirus-8 infections for early recognition and effective treatment of Kaposi sarcoma herpesvirus-associated inflammatory cytokine syndrome in solid organ transplant

Mularoni A et al. American Journal of Transplantation 25 (2025) 1070–1085.

FIRST PHASE: (2011-2017)

HHV-8 serology screening *all D and R-> stratify risk post-Tx HHV-8-related disease.*
HHV-8 D+/R- or R+ - > HHV-8 DNAemia *(every 2 wks up to 3 mo; monthly up to 1 year post-Tx;*
Patients with persistent positive HHV-8 DNAemia and symptomatic infection are treated with an antiviral (foscarnet or cidofovir).

SECOND PHASE: (2017-)
Strict clinical monitoring and ***early intervention*** *in cases of primary HHV-8 infection (D+/R- and D-/R-) or reactivation (R+).*
IS switched *by replacing calcineurin inhibitors (CNIs) with (mTOR) inhibitors, when feasible.*
In KICS, *we additionally provide* ***rituximab plus an antiviral*** *(foscarnet or cidofovir) as soon as is diagnosed.*

PROPOSED PROTOCOL FOR THE MANAGEMENT OF HHV-8 INFECTION IN SOT

- Testing donors and recipients,
- monitoring for DNAemia in recipients at high or moderate risk
- treatment with antivirals
- switching CNI to mTOR inhibitors
- Rituximab for KICS.

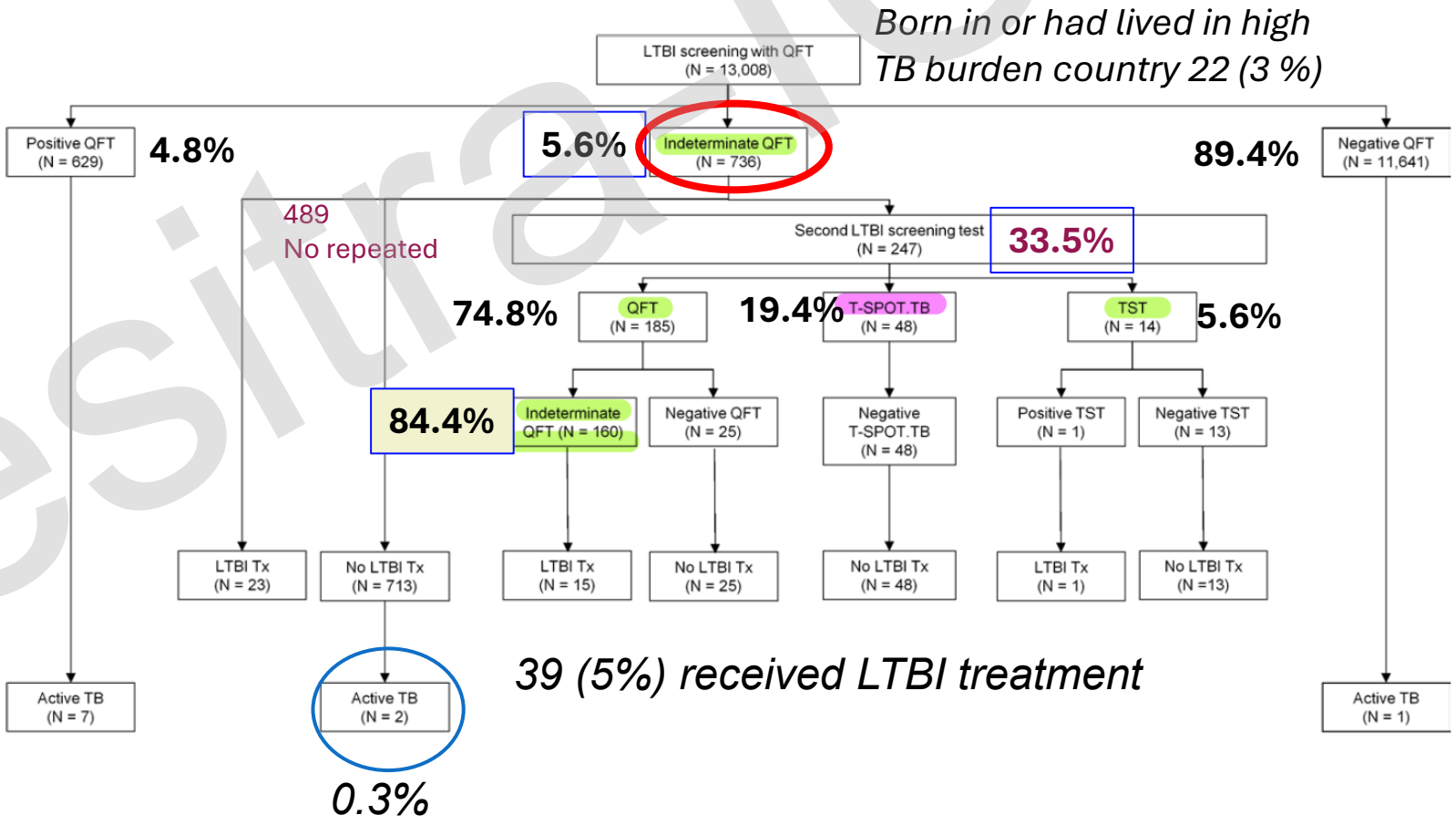
Systematic review HHV8-related diseases in solid organ transplantation
Bonazzetti et al. / Clinical Microbiology and Infection 31 (2025) 1816—1821

Analysis of Indeterminate QuantiFERON Assay Results in Solid Organ Transplant Candidates and Proposed Management

Chiu CY et al. Transplantation 2025;109: 729–735.

Retrospective study (201-2023). Mayo Clinic hospitals (AZ, FL, MN)
Adult patients (age >18 y) who underwent a SOT with LTBI screening before transplantation.

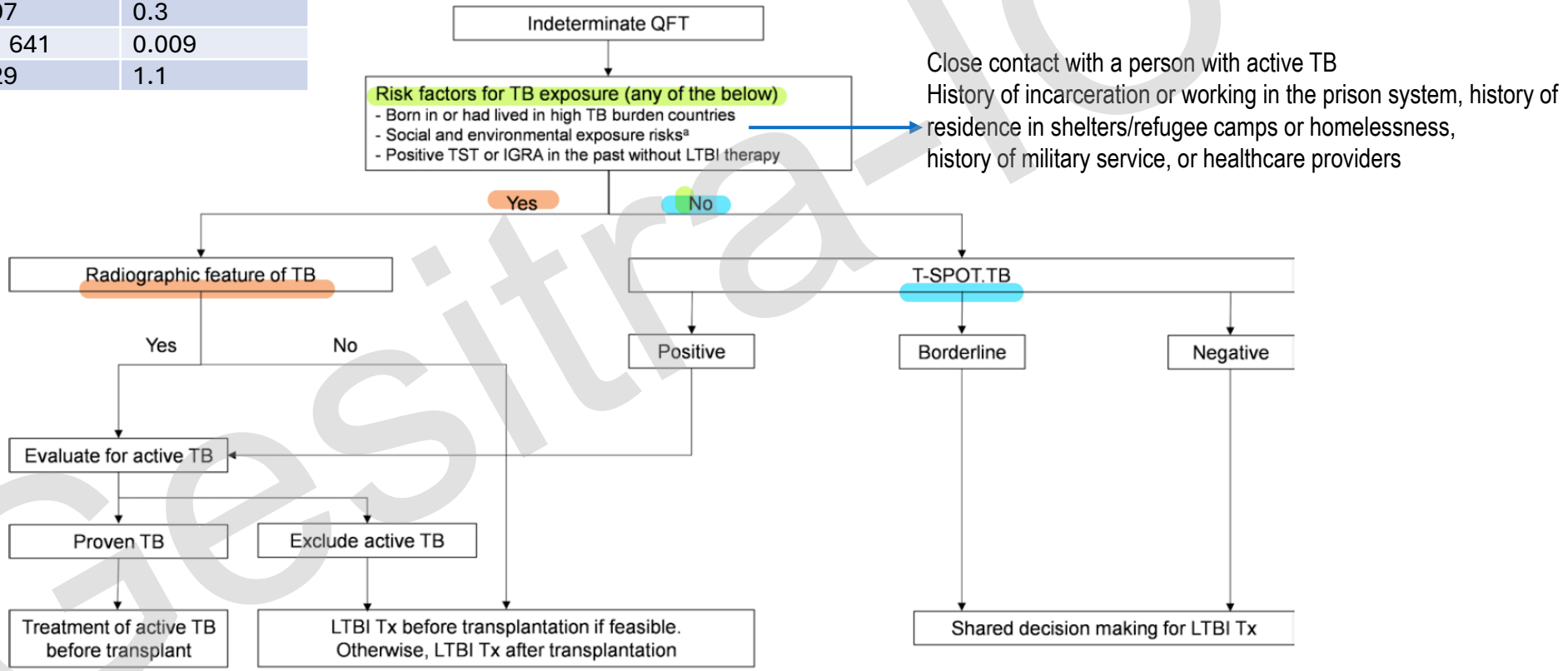
- Frequency of indeterminate QFT
- Rresults of repeat LTBI screening
- Treatment decisions
- Rate of posttransplant TB infection.



Analysis of Indeterminate QuantiFERON Assay Results in Solid Organ Transplant Candidates and Proposed Management

Chiu CY et al. Transplantation 2025;109: 729–735.

Patient Group	TB Cases	Total Patients	Cumulative Incidence (%)
Indeterminate	2	697	0.3
Negative results	1	11 641	0.009
Positive results	7	629	1.1



- Indeterminate IGRA results informed of the risk of developing active TB disease without treatment.
- If a repeat LTBI test is considered, T-SPOT TB might be a better choice than repeat QFT
- LTBI treatment should rely on both TB screening test results and epidemiological risk factors.

Clinical Management and Outcomes of Nontuberculous Mycobacterial Infections in Solid Organ Transplant Recipients: A Multinational Case-control Study

Lopez –Medrano F. Et al. Transplantation 2025;109: e134–e141

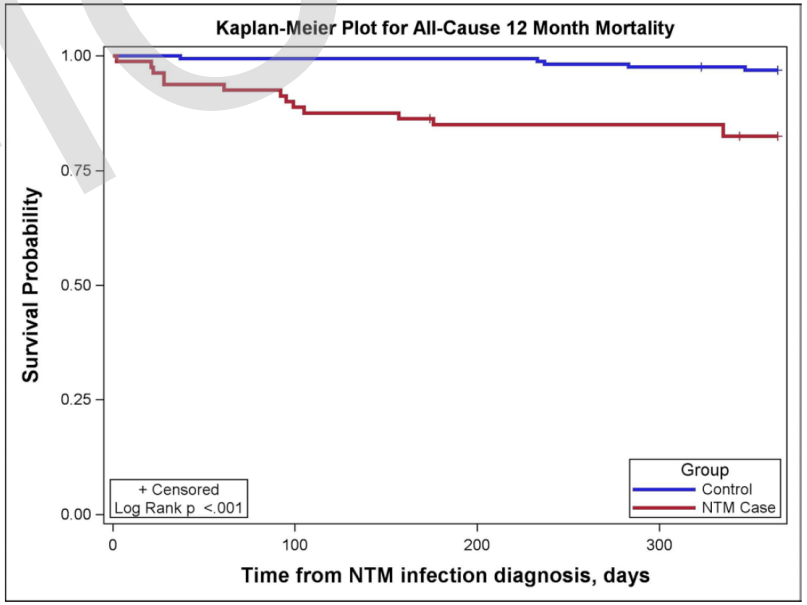
Management and 1-y mortality of NTM in SOT patients and factors associated. (2008-2018)

Retrospective, multinational, 1:2 matched case-control study

Controls matched on transplanted organs, NTM treatment center, and posttx survival at least equal to the time to NTM diagnosis.

In 85 patients and 169 controls
Lungs - site of infection SOT (57.6%). SGM most freq. MAI

One-year mortality was significantly higher in cases than in controls (20% versus 3%; P < 0.001), and higher mortality was associated with lung transplantation (HR 3.27; 95% CI[1.1-9.77]; P = 0.034).



Conclusions.
NTM disease in SOT recipients is associated with a higher mortality risk, especially among LTR.
Time to NTM treatment and reduction in net immunosuppression were not associated with mortality.

Invasive Fungal Disease in Solid Organ and Hematopoietic Cell Transplant Recipients, United States

Gold JAW et al. Transpl Infect Dis. 2025 ; 27(5): e70077

Years 2018–2022 . Merative MarketScan Commercial and Medicare Supplemental Research Databases

9143 SOT patients included (KT 5667, LiTX 2025, HTX 759, LTX 650, PTX 39) – 4% of US tx
360 SOT patients developed an **IFD (incidence: 21.0 per 1000 person-years**).
Mold infections had the highest incidence (7.1), followed by unspecified mycoses (3.9) and endemic mycoses (3.3).

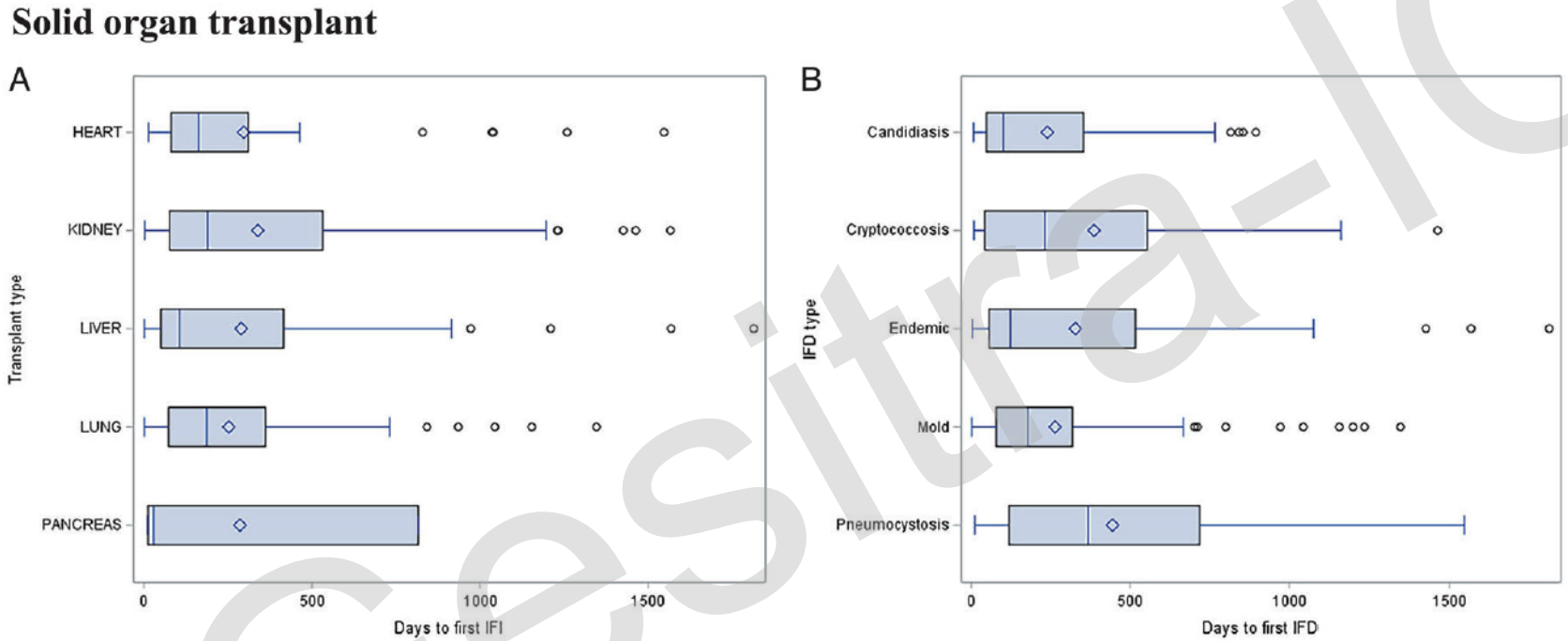
TOTAL SOT: 9143	N (Incidence-1000 persons-year)
Any IFD	360 **(21.0)**
Mold infections	121 **(7.1)**
Aspergillosis	115 **(6.7)**
Mucormycosis	7 **(0.4)**
Candidiasis	48 **(2.8)**
Endemic mycoses	56 **(3.3)**
Blastomycosis	2 **(0.1)**
Histoplasmosis	31 **(1.8)**
Coccidioidomycosis	23 **(1.3)**
Cryptococcosis	27 **(1.6)**
Pneumocystosis	32 **(1.9)**
Other specified	22 **(1.3)**
Unspecified	67 **(3.9)**

SOT Type	IFD Incidence-1000 persons-year	IFD Cases (n)
Lung	105.3	117
Pancreas	41.2	3
Heart	24.8	35
Liver	18.7	67
Kidney	12.6	138

Invasive Fungal Disease in Solid Organ and Hematopoietic Cell Transplant Recipients, United States

Gold JAW et al. Transpl Infect Dis. 2025 ; 27(5): e70077

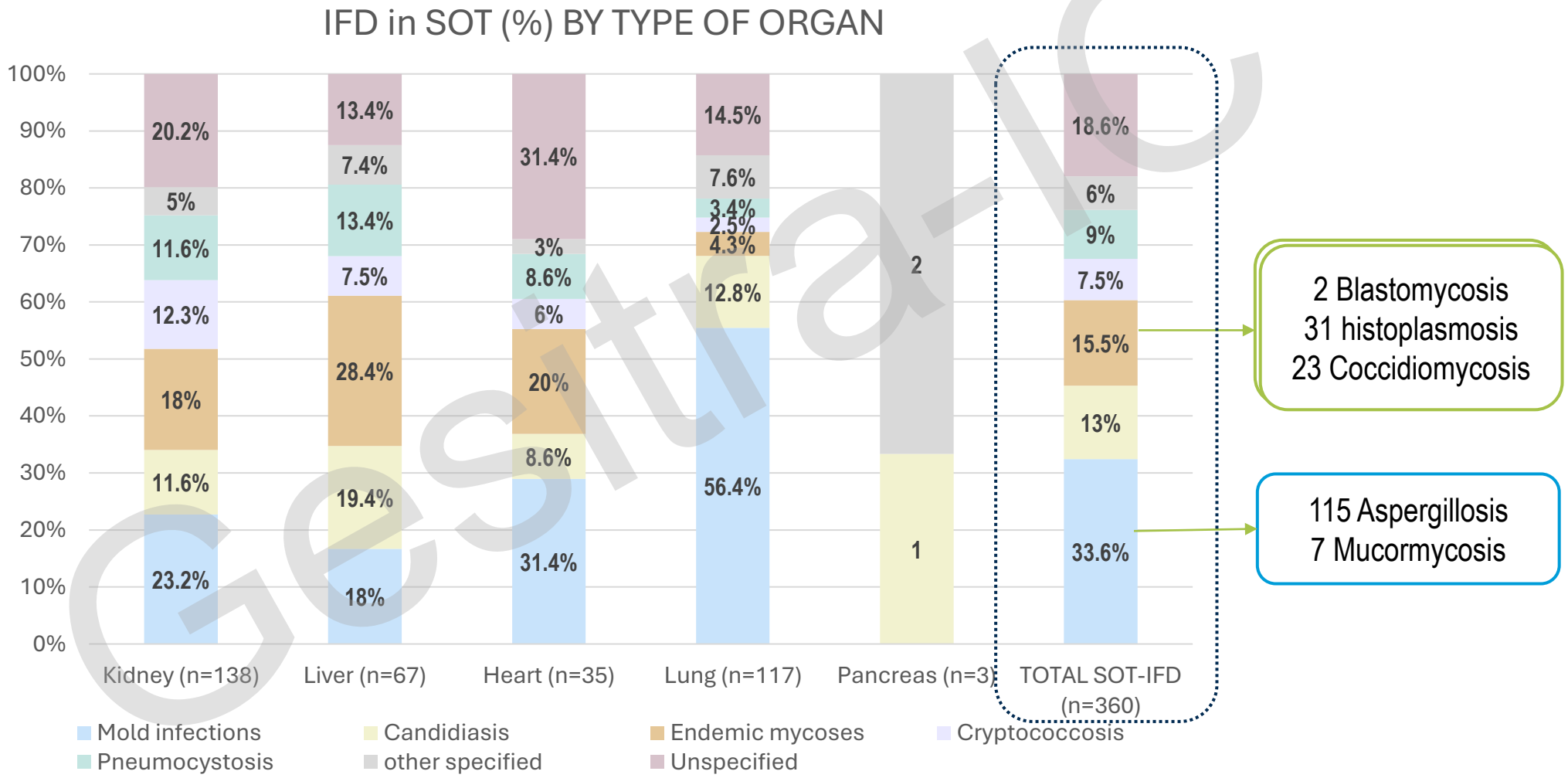
360 SOT patients developed an IFD (incidence: 21.0 per 1000 person-years).



IFD Type	Median Days from TX to Diagnosis	IQR (Days)
All IFDs	173.5	66.0–407.5
Pneumocystosis	372.5	134.5–792.5
Cryptococcosis	210.0	42.0–544.0
Mold infections	178.0	78.0–318.0
Endemic mycoses	108.0	53.5–492.0
Candidiasis	104.0	50.0–315.0

Invasive Fungal Disease in Solid Organ and Hematopoietic Cell Transplant Recipients, United States

Gold JAW et al. Transpl Infect Dis. 2025 ; 27(5): e70077



IFDs remain an important cause of infection, particularly later in the posttransplant period.

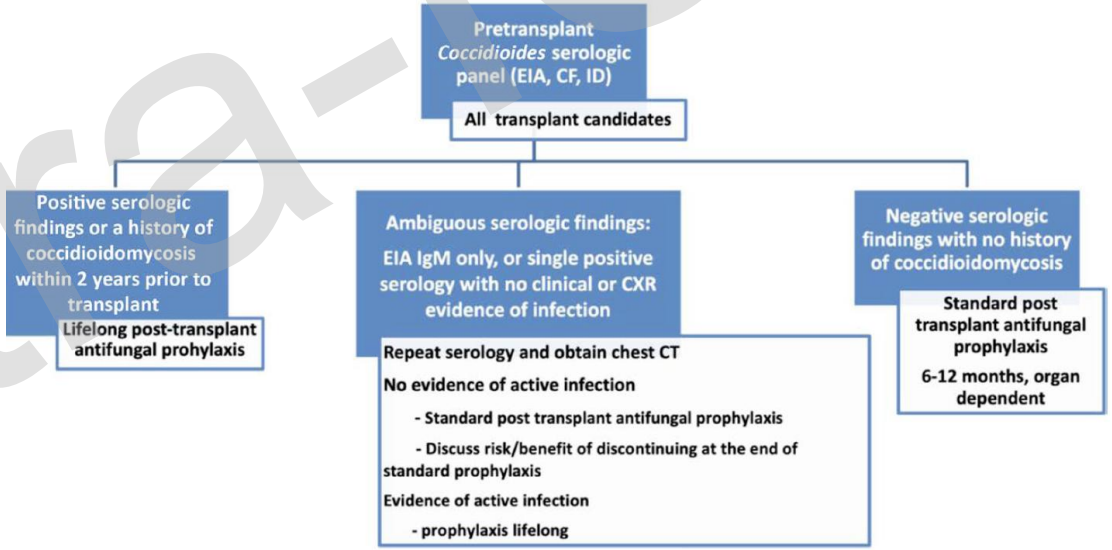
O MEJOR DE 2025 EN ... INFECCION por MICOBACTERIAS EN TOS

Outcomes of Coccidioides Seropositive Solid Organ Transplant Recipients After Selfdiscontinuation of Antifungal Prophylaxis. *Gupta et al. Transplantation 2025;109: 1251–1256.*

Antifungal Prophylaxis for Coccidioidomycosis: How Long Is Long Enough? *Shoham S et al. Transplantation 2025, 109 (7) : 1117-18*

- Infection caused by Coccidioides immitis and Coccidioides posadasii. Endemic areas include parts of the Southwest United States, Mexico, Central America, and South America
- First year after transplant, high risk for the development of coccidioidomycosis, but risk persists beyond
- Rate of symptomatic disease in TXR living in an endemic area - 6.9% (severe complications, 72% disseminated infection, mortality 61%).
- Antifungal prophylaxis of higher-risk patients decreased rates of coccidioidomycosis during that first year to 2.6% and universal prophylaxis all but eliminated cases during that first year.

77 pts with EIA IG M pos discontinued fungal prophylaxis- no infection -



Discontinuing antifungal prophylaxis at the end of that first year after transplant was reasonable for patients whose only evidence for coccidioidomycosis was positive EIA-IgM

Consensos

Special Feature

OPEN

The Fourth International Consensus Guidelines on the Management of Cytomegalovirus in Solid Organ Transplantation

Camille N. Kotton, MD,[1] Deepali Kumar, MD,[2] Oriol Manuel, MD,[3] Sunwen Chou, MD,[4] Randall T. Hayden, MD,[5] Lara Danziger-Isakov, MD, MPH,[6] Anders Asberg, PhD,[7] Helio Tedesco-Silva, MD,[8] and Atul Humar, MD[2]; on behalf of The Transplantation Society International CMV Consensus Group*

Clinical Microbiology and Infection 31 (2025) S3–S13

Contents lists available at ScienceDirect

Clinical Microbiology and Infection

journal homepage: www.clinicalmicrobiologyandinfection.com

ORCHESTRA Delphi consensus: diagnostic and therapeutic management of SARS-CoV-2 infection in solid organ transplant recipients

Beatrice Tazza [1], Natascia Caroccia [1], Alice Toschi [2], Renato Pascale [1,2], Effrosyni Gkrania-Klotsas [3,4], Paula Olivares Navarro [5,6,7], Lorenzo Maria Canziani [8], Alessandro Tavelli [9], Andrea Antinori [10], Paolo Antonio Grossi [11], Maddalena Peghin [11], Evelina Tacconelli [8], Zaira Raquel Palacios-Baena [5,6,7], Pierluigi Viale [1,2], Maddalena Giannella [1,2,*] on behalf of Expert team and ORCHESTRA WP4 working group. Expert team Group Authorship , WP4 Working Group

Transplantation Reviews 39 (2025) 100937

Contents lists available at ScienceDirect

Transplantation Reviews

journal homepage: www.elsevier.com/locate/trre

Review article

Management of multidrug-resistant gram-negative bacilli infections in adult solid organ transplant recipients: GESITRA-IC/SEIMC, CIBERINFEC, and SET recommendations update.

Isabel Rodríguez-Goncer [a,b,c,1,*], Elisa Ruiz-Arabi [b,d,e,1], Sabina Herrera [f], Nuria Sabé [g], Ibai Los-Arcos [b,h], José Tiago Silva [a,b], Elena Pérez-Nadales [b,d,e,i], Isabel Machuca [b,d,e], Rocío Álvarez [b,j], Maricela Valerio [b,c,k], Juan José Castón [b,d,e], Victoria Aguilera [l,m], Marta Bodro [b,f], Ángela Cano [b,d], Rafael Cantón [b,n], Purificación Carmona [o], Jordi Carratalà [b,g], Elisa Cordero [b,j,p], Josep María Cruzado [q], María Carmen Fariñas [r], Mario Fernández-Ruiz [a,b,c], Constantino Fondevila [s], Jesús Fortún [b,t], M. Dolores García-Cosío [u,v], Alex Gutiérr[illegible], David Iturbe [x], Iago Justo [y], Oscar Len [b,h], Francisco López-Medrano [a,b,c], María Ovidia López Oliva [z], Pilar Martín-Dávila [b,t], Luis Martínez-Martínez [b,e,i,aa], Auxiliadora Mazuecos [ab], Sonia Mirabet [v,ac], Patricia Muñoz [b,c,k], Antonio Oliver [b,], María José Pérez-Sáez [ae], Jorge Rodríguez-Gómez [o], Rafael San-Juan [a,b,c], Javier Sánchez-Céspedes [b,], Amparo Solé [af], Elisa Vidal Verdú [b,d], Jennifer Villa [c,ag], Julián Torre-Cisneros [b,d,e,2], José María Aguado [a,b,c,2,*]

Clinical Microbiology and Infection 31 (2025) 1655–1666

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Position paper

Management of COVID-19 in immunocompromised patients: an European Society of Clinical Microbiology and Infectious Diseases consensus document

Michele Bartoletti [1,2], Ozlem Azap [3], Aleksandra Barac [4,5], Manel Ben Selma [6], Onder Ergonul [7], Effrossyni Gkrania-Klotsas [8], Paolo Antonio Grossi [9,10], Robert Krause [11,12], Blin Nagavci [13,14], José Ramón Paño-Pardo [15,16,17], Ligia Camera Pierrotti [18], Nicholas Power [19], Jesús Rodríguez-Baño [16,20,21], Marcella Sibani [22], Monica A. Slavin [23,24], Balint Gergely Szabo [25,26], Beatrice Tazza [27], Nicole Ngai Yung Tsang [28], Sotirios Tsiodras [29], Ines Zollner-Schwetz [11,12], Roy F. Chemaly [30,*], on behalf of the ESCMID Study Group for Infections in Compromised Hosts and the ESCMID Study Group for Respiratory Viruses

Clinical Transplantation

REVIEW ARTICLE

Management of Cytomegalovirus Infection in Allogeneic Hematopoietic Stem Cell and in Solid Organ Transplantation: Updated Recommendations by the GITMO, SITO, SIMIT, and AMCLI Italian Societies

Corrado Girmenia[1] | Tiziana Lazzarotto[2,3] | Massimo Martino[4] | Francesca Bonifazi[5] | Fausto Baldanti[6,7] | Pierangelo Clerici[8] | Franco Citterio[9] | Luciano De Carlis[10,11] | Giovanni Barosi[12] | Paolo Antonio Grossi[13]