Infection Prevention and Management in Immunocompromised Cancer Patients

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Disclosures

I have no financial interests or relationships to disclose.

Outline

- Respiratory Virus Vaccines
- Measles
- Cytomegalovirus

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- **Respiratory Virus Vaccines**
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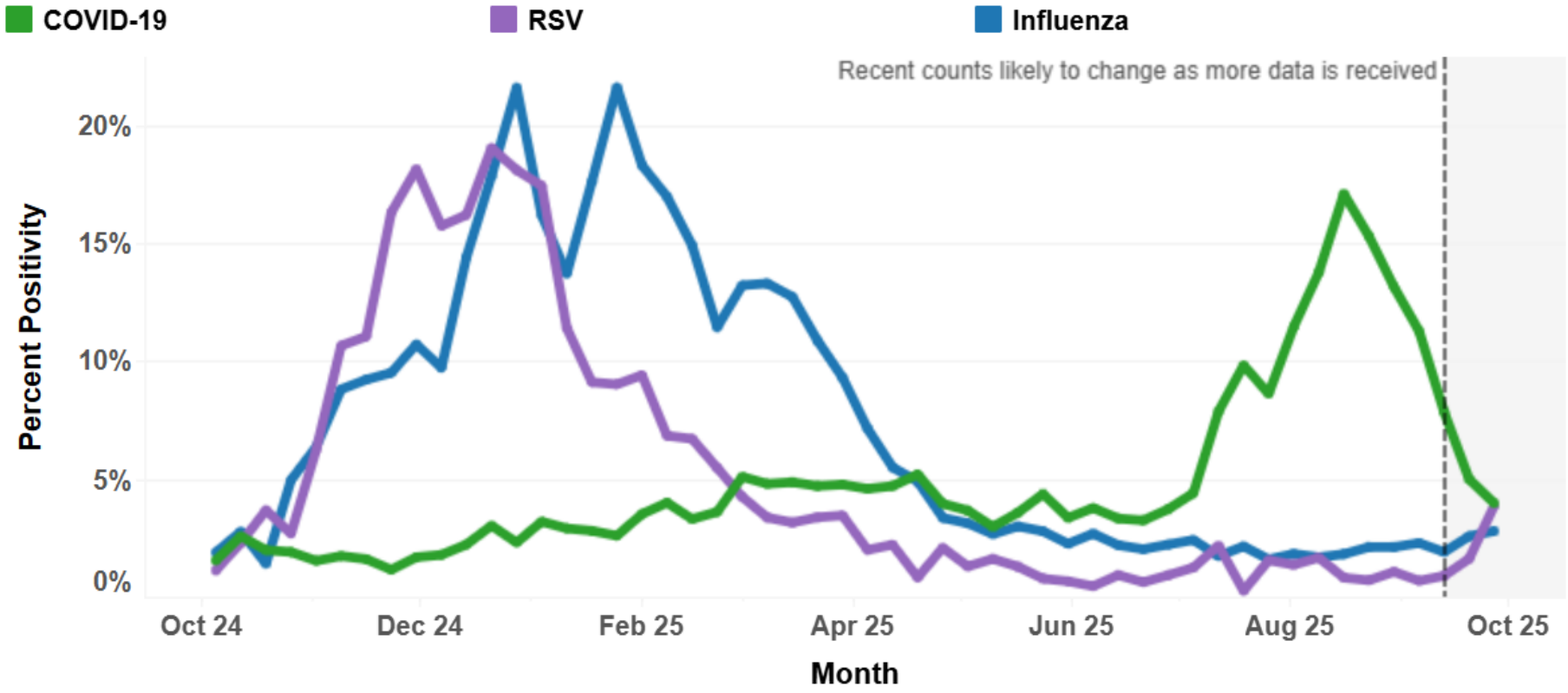
Louisiana Respiratory Virus Surveillance



The Louisiana laboratory respiratory virus surveillance program is made up of a network of hospital and clinic-based laboratories that voluntarily submit testing data weekly. These laboratories perform rapid (antigen) and polymerase chain reaction (PCR) testing for COVID-19, influenza, and RSV.

https://ldh.la.gov/page/respiratory-laboratory-survey-data

Influenza Vaccine

- Annual influenza vaccine for all persons aged ≥6 months
- Immunocompromised hosts:
  - Recombinant influenza vaccine – Flublok
  - Adjuvanted inactivated influenza vaccine – Fluad
- Contraindicated:
  - Live attenuated influenza vaccine – FluMist
- ACIP recommends single dose vials free of thimerisol

https://www.cdc.gov/flu/hcp/acip/index.html
https://www.hhs.gov/press-room/thimerosal-mercury-removed-from-us-flu-vaccines-acip.html

COVID-19 Vaccine

FDA approved

≥65 years

5-64 years with at least one underlying condition with high risk for severe outcomes

High Risk Conditions

Cancer – Hematologic Malignancies

Hematopoietic cell transplantation (HCT)

Use of immunosuppressive medications

https://www.fda.gov/vaccines-blood-biologics/comirnaty
https://www.fda.gov/vaccines-blood-biologics/spikevax

Do patients need a prescription for COVID-19 vaccine?

For the states of Louisiana, Mississippi, and Alabama:

- NO, if the patient is ≥65 years
- YES, if the patient is 18-64 years old with at least one underlying condition placing at high risk

https://www.kff.org/covid-19/tracking-state-actions-on-vaccine-policy-and-access/

RSV Vaccine

Vaccine	FDA Approval
Abrysvo Pfizer	≥60 years Pregnant women at 32 though 36 weeks gestational age
Arexvy GSK	≥60 years
mResvia Moderna	≥60 years

https://www.cdc.gov/vaccine-safety/vaccines/rsv.html

RSV Vaccine – Expanded Indications

Vaccine	FDA Approval
Abrysvo Pfizer	≥60 years Pregnant women at 32 though 36 weeks gestational age 18-59 years who are at increased risk of RSV disease*
Arexvy GSK	≥60 years **50-59 years** who are at increased risk of RSV disease*
mResvia Moderna	≥60 years 18-59 years who are at increased risk of RSV disease*

*Moderate and severe immunocompromising conditions and treatment
(Active treatment for malignancy, hematologic malignancy, CAR-T therapy, HCT, immunosuppressive agents)

https://www.cdc.gov/vaccine-safety/vaccines/rsv.html

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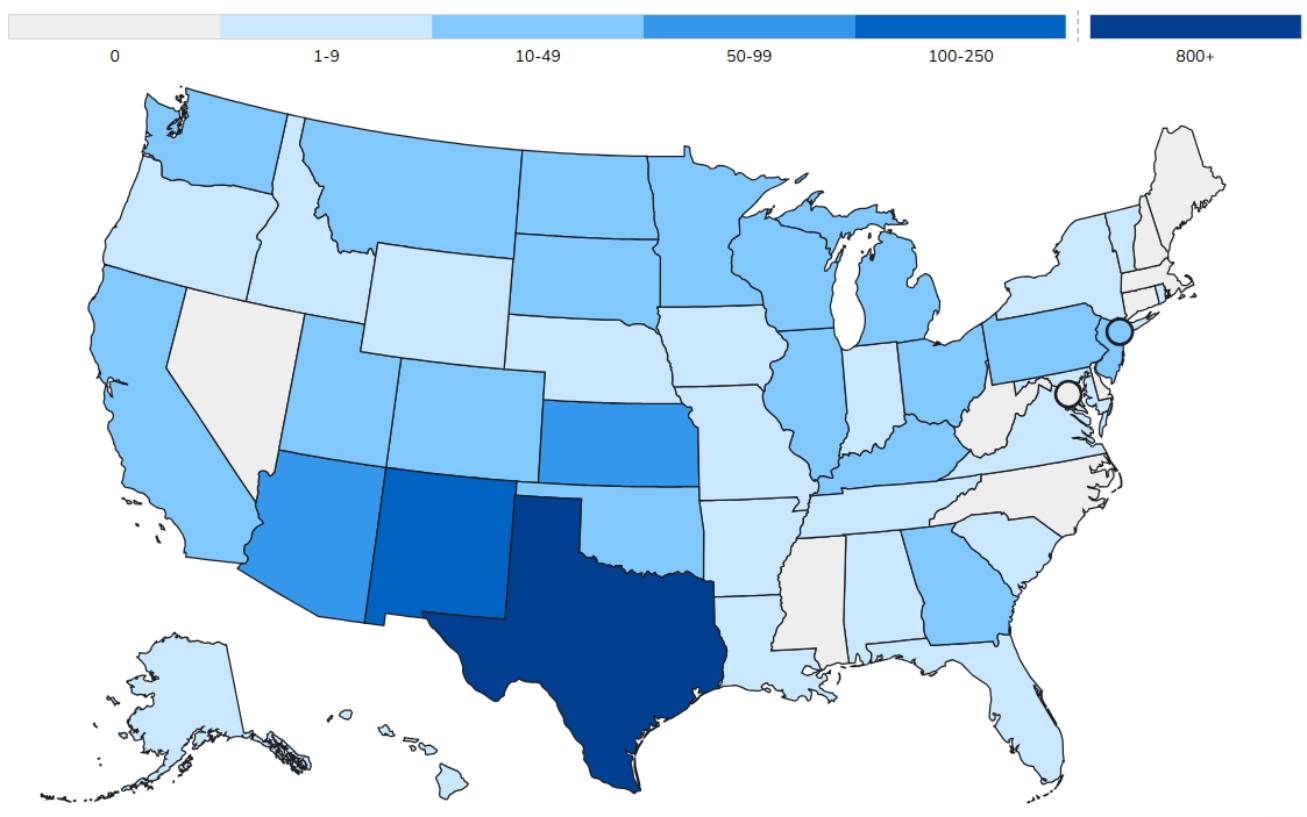
- Respiratory Virus Vaccines
- **Measles**
- Cytomegalovirus

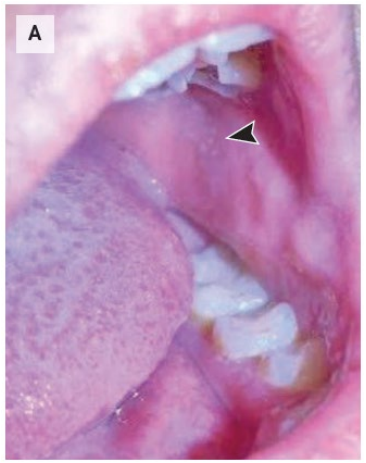


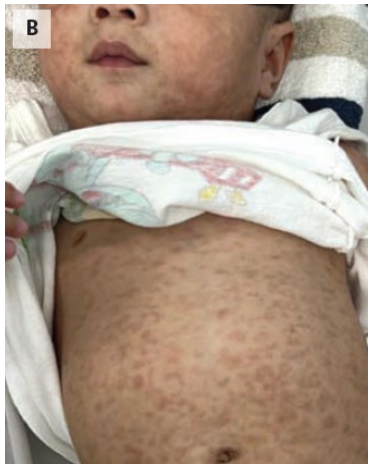
US Measles 2025

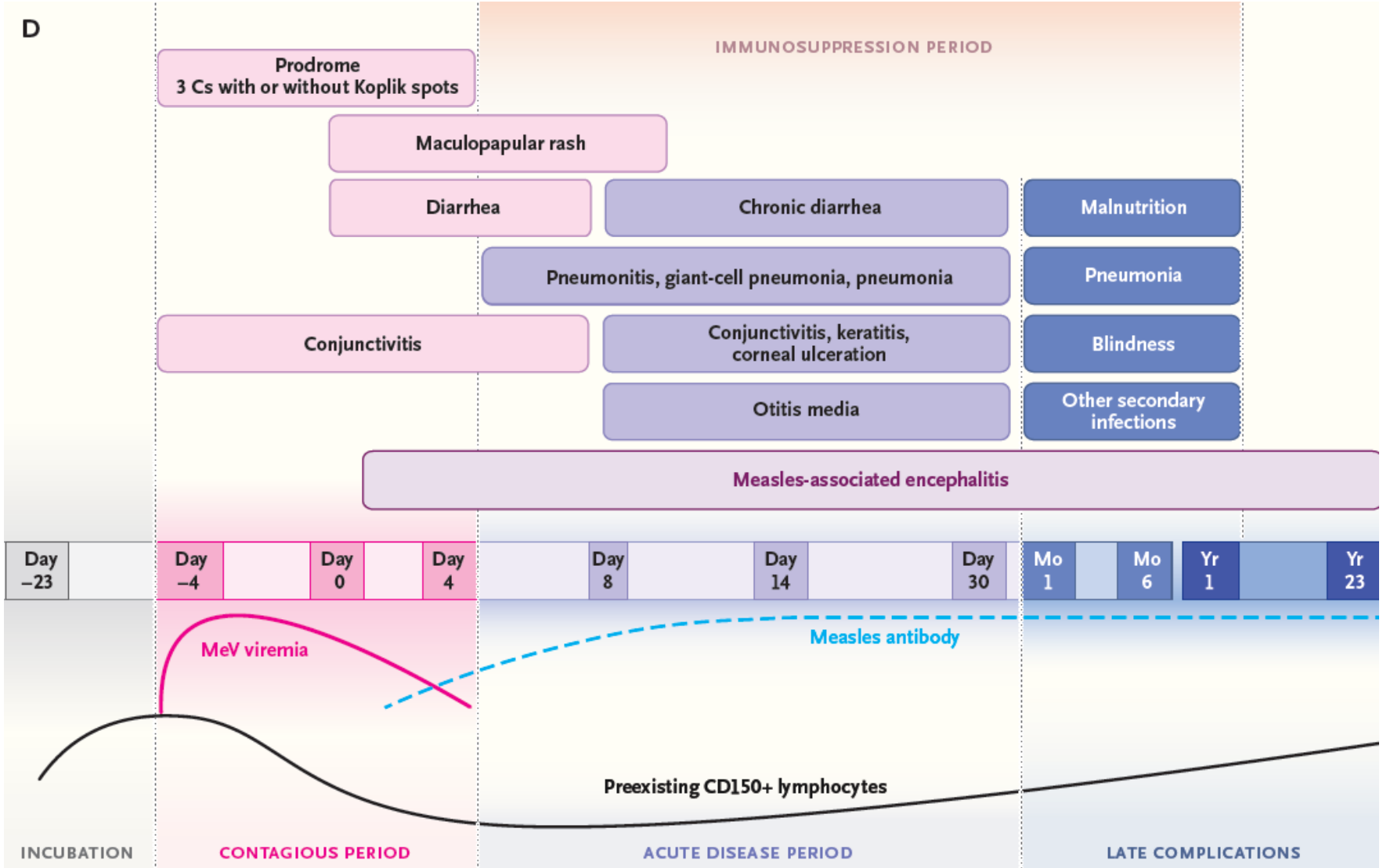
- As of 9/30/2025
- 42 States
- Total cases 1,544
  - Unknown/unvaccinated 92%
  - Hospitalizations 12%
  - 3 Deaths

https://www.cdc.gov/measles/data-research/index.html

Measles Clinical Features and Pathogenesis



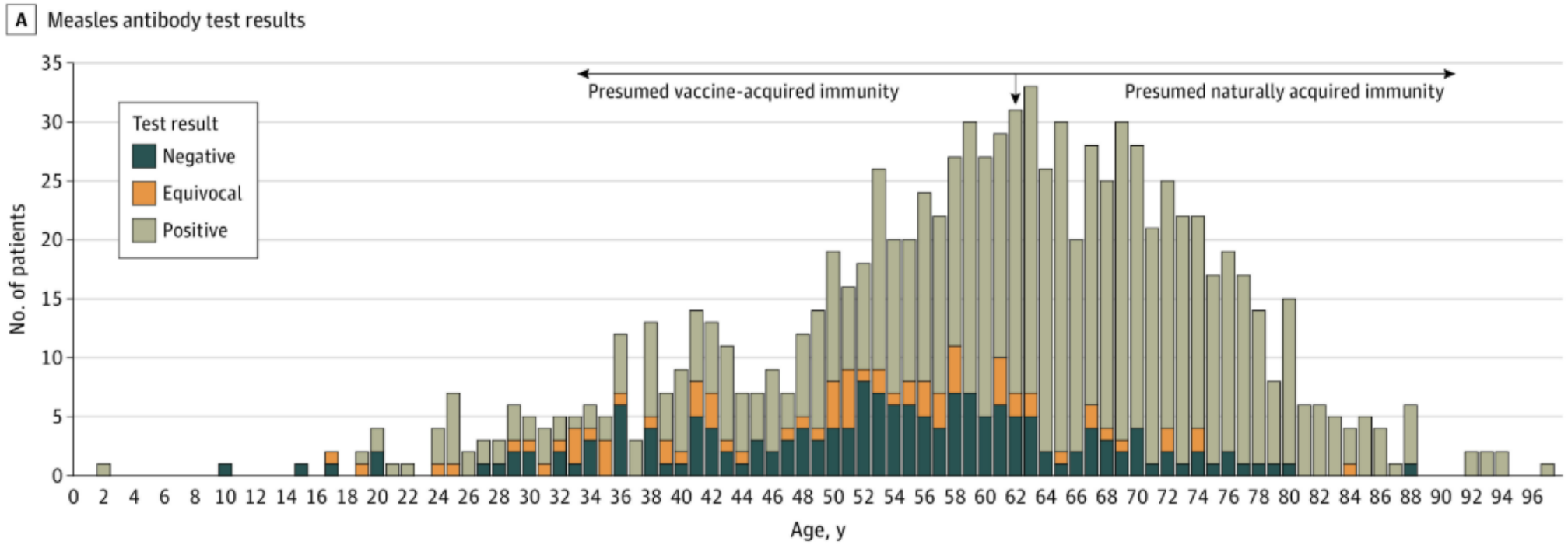




Do LAH NEJM 2025

Protective Measles Antibodies among Patients with Cancer

- Cross-sectional study of n=959 patients with cancer
- Lacked protective antibodies
  - 25% all patients with cancer
  - 37% hematological malignancy
  - 54% with history of HCT



Marquis JAMA Netw Open 2021

When is it safe to vaccinate immunocompromised patients with MMR vaccine?

Condition	Timing after Treatment
Leukemia	3 months after end of chemotherapy 6 months after receipt anti-B cell antibodies
Auto / Allo HCT	24 months after HCT Off immunosuppressive therapy for 12 months No IVIG within the last 8 months

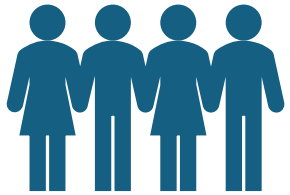
Should I deviate from vaccine recommendations in an outbreak setting?

Criteria	AlloHCT	AutoHCT	CAR-T Cell Therapy
Timing	>1 year post		>6 months post
Immunosuppressive therapy	Tacro <5 Cyclosporine <120 Sirolimus <2	No chemo (except lenalidomide / bortezomib)	No chemo
Steroid use	<Pred 5 mg qd for secondary adrenal insufficiency		
Cell Counts	Total lymphocyte count >1,000 or CD4 > 200 and CD19 > 20		
Immunoglobulin level	Unsupported IgG>400, measurable IgA >6		

Pergam BBMT 2019

What if my patient has been potentially exposed to measles?

IVIG or IMIG within 6 days of the exposure



Exposed patients should be monitored for 28 days

Excluded from public locations

What if my patient has measles?

1. Mask and isolate patient
2. Notify the Louisiana Infectious Disease Epidemiology Hotline
3. Nasopharyngeal testing for measles virus by PCR
4. Track all employees contacted with the patient

Outline

- Respiratory Virus Vaccines
- Measles
- **Cytomegalovirus**

ASTCT
American Society for Transplantation and Cellular Therapy

Guideline

American Society for Transplantation and Cellular Therapy Series #11: Updated Cytomegalovirus Guidelines in Hematopoietic Cell Transplant and Cellular Therapy Recipients

1. Maribavir NOT recommended for CMV preemptive therapy
2. Letermovir prophylaxis until day 200 after HCT for patients at high risk CMV

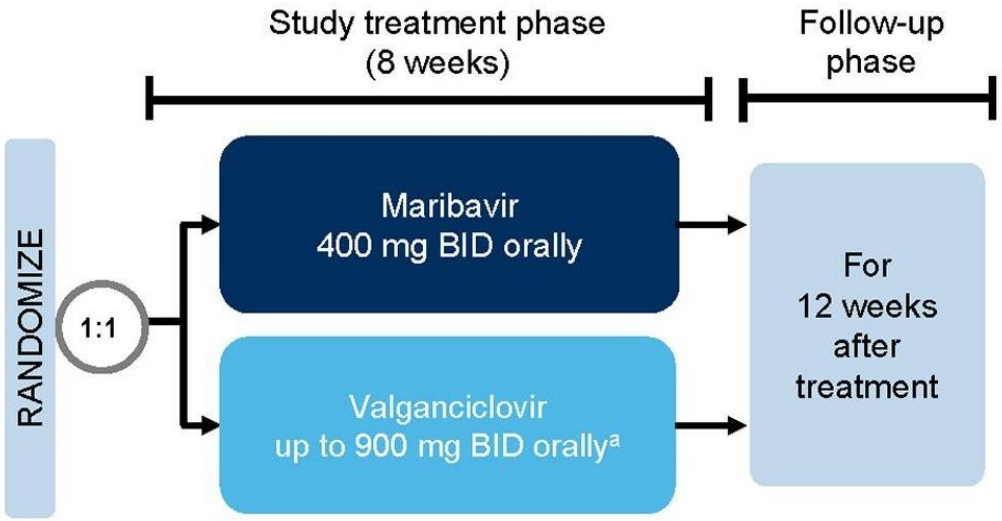
Maribavir

2025 UPDATES

- Recommended for post-transplant resistant / refractory CMV treatment
- Not recommended as first-line preemptive therapy for CMV infection

AURORA Trial

STUDY DESIGN



STUDY ENDPOINTS

Primary endpoint: Confirmed CMV viremia clearance at week 8 (prespecified non-inferiority margin of 7.0%).

Key secondary endpoint: Achievement of CMV viremia clearance with no clinical findings of CMV tissue-invasive disease at week 8, maintained through week 16.

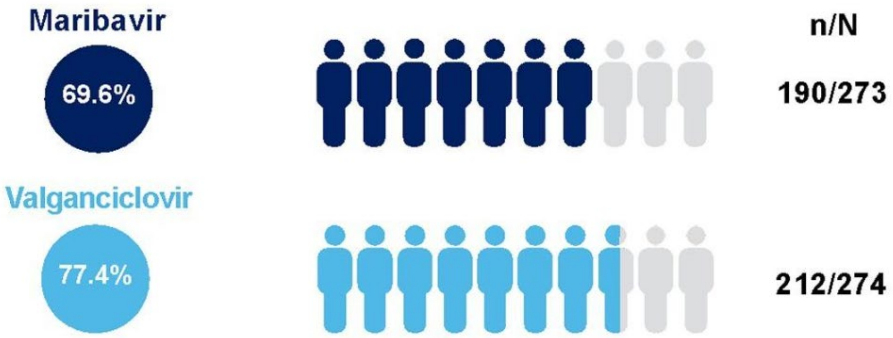
Papanicolaou CID 2024

AURORA Trial

RESULTS

553 patients randomized; analyses were performed in patients who received treatment (maribavir, n=273; valganciclovir, n=274)

Primary endpoint (week 8)



Adjusted difference (95% CI): −7.7% (−14.98, −0.36)

Non-inferiority of maribavir to valganciclovir for the primary endpoint was not met based on the prespecified margin of 7.0%.

Key secondary endpoint (week 16)

Adjusted difference (95% CI): 4.4% (−3.91, 12.76)

In both arms, a similar proportion of patients achieved CMV viremia clearance with no clinical findings of CMV tissue-invasive disease at week 8, maintained through week 16.

Papanicolaou CID 2024

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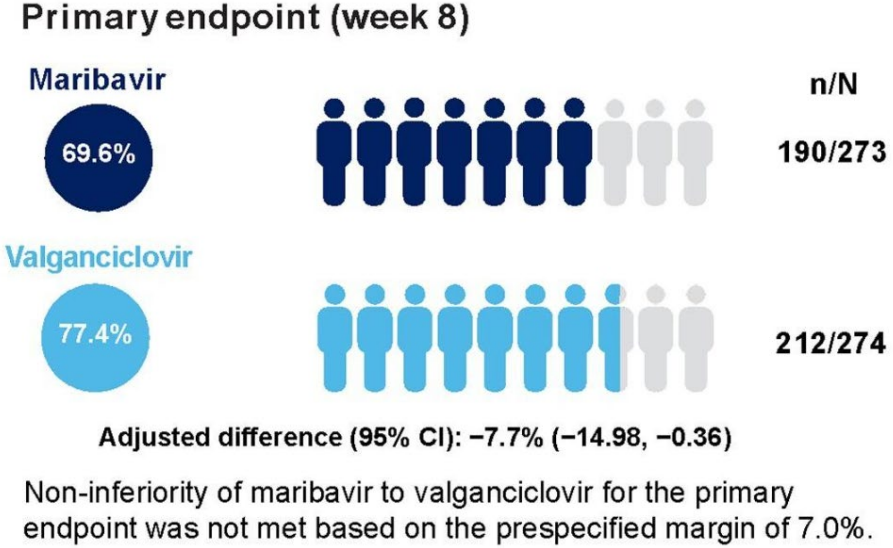
RESULTS

553 patients randomized; analyses were performed in patients who received treatment (maribavir, n=273; valganciclovir, n=274)



Non-inferiority of maribavir to valganciclovir for the primary endpoint was not met based on the prespecified margin of 7.0%.

CONCLUSIONS

- At week 8, maribavir did not demonstrate non-inferiority to valganciclovir for achievement of CMV viremia clearance based on a prespecified margin of 7.0%.
- Maribavir demonstrated a comparable treatment effect to valganciclovir post-therapy.
- Maribavir was associated with a lower rate of treatment discontinuation due to neutropenia than valganciclovir.

Papanicolaou CID 2024

Letermovir

2021 Guidelines

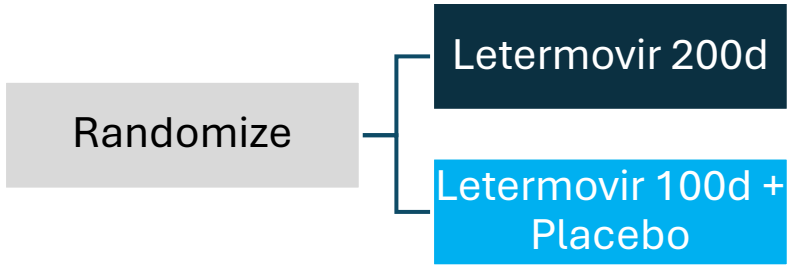
- Recommended primary CMV prophylaxis through day 100 in CMV seropositive allogeneic HCT recipients

2025 UPDATE

- Extend primary CMV prophylaxis through day 200 for patients at high-risk for CMV infection
  - Allografts from mismatched or haploidentical donor
  - Umbilical cord transplant
  - T-cell depletion
  - Systemic prednisone > 1 mg/kg/day within 6 weeks of day 100

Extended Duration Letermovir Prophylaxis

STUDY DESIGN



STUDY ENDPOINTS

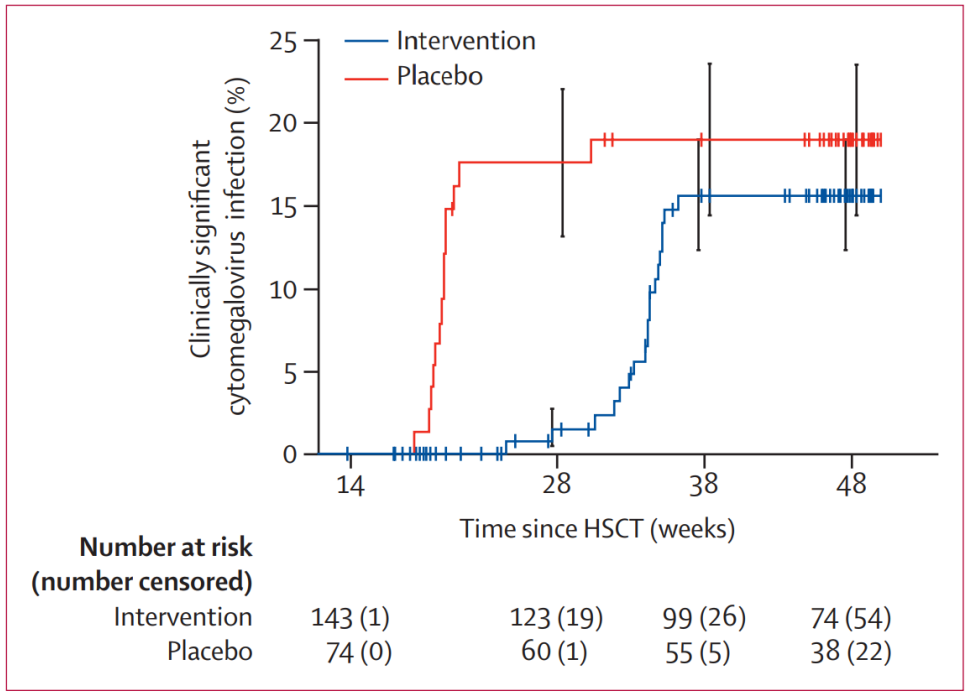
Clinically Significant CMV Infection

Primary	**Secondary**	
Week 28	Week 38	Week 48

Russo Lancet Haematol 2024

Extended Duration Letermovir Prophylaxis

Cumulative Rate of CMV Infection



	Letermovir group (n=144)	Placebo group (n=74)	Treatment difference (95% CI)*	p value
Primary endpoint†				
Failures‡ from week 14 to week 28	4 (3%)	14 (19%)	−16·1 (−25·8 to −6·5)	0·0005
Clinically significant cytomegalovirus infection	2 (1%)	13 (18%)	..	..
Initiation of PET based on documented cytomegalovirus viraemia	1 (<1%)	11 (15%)	..	..
Onset of end-organ disease	1 (<1%)	2 (3%)	..	..
Key secondary endpoints				
Clinically significant cytomegalovirus infection§				
From week 14 to week 38	19 (13%)	14 (19%)	−5·7 (−16·8 to 5·4)	0·16
From week 14 to week 48	19 (13%)	14 (19%)	−5·7 (−16·8 to 5·4)	0·16

Russo Lancet Haematol 2024

Take Home Points

- Respiratory Virus Vaccines
  - Influenza, COVID-19, RSV vaccines recommended for immunocompromised patients with cancer
  - May require prescription depending on age
- Measles
  - MMR vaccine can be considered for immunocompromised patients in outbreak setting
  - IVIG recommended within 6 days of possible measles exposure
- Cytomegalovirus
  - Maribavir recommended for treatment of R/R CMV infection, but not for primary preemptive therapy
  - Extended duration of letermovir prophylaxis through day 200 is recommended for alloHCT recipients at high risk for CMV infection

Questions?

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