Educational Needs Assessment of US Healthcare Practitioners Managing Cytomegalovirus Infection in Hematopoietic Stem Cell Transplant Recipients: Results From a Survey Using a Simulated Case Scenario

Brandon Coleman[1], Gregory D. Salinas[1], Morgan Leafe[1], Morgan Hakki[2], Anne Roc[3], Uma Chandrasekaran[3], Daniele K. Gelone[3]

1. CE Outcomes, LLC; Birmingham, AL, USA
2. Oregon Health and Science University; Portland, OR, USA
3. Takeda Pharmaceuticals, USA; Lexington, MA, USA

Introduction and purpose

Cytomegalovirus (CMV) infection is an important post-transplant complication associated with morbidity and mortality in hematopoietic stem cell transplant (HSCT) recipients. Healthcare practitioners (HCPs) have a persistent challenge of balancing immunosuppression and infection control in HSCT recipients. Due to recent advances in anti-CMV therapies, it is imperative that HCPs are kept apprised of the latest clinical evidence and of CMV treatment algorithm updates.

Methodology

A survey utilizing a simulated case study (a 35-year-old CMV-seropositive female undergoing allogeneic HSCT from a 10/10 human leukocyte antigen (HLA)-matched, CMV-seronegative donor) was built to assess US HCPs' current knowledge, practice patterns and awareness of emerging therapies, and to inquire on their preferred format for continuing medical education (CME). The survey was tested with a representative from each HCP type prior to implementation to ensure that none of the items were ambiguous and that the case represented a typical patient seen in practice.

The survey was distributed online in June/July 2022 to United States-practicing hematology-oncology clinicians, infectious disease clinicians, and transplant pharmacists using national mailing lists and lists of clinicians who have previously opted-in to similar educational research.

To be included in the results, HCPs had to treat ≥1 HSCT recipient per month. For the quantitative questions, descriptive data, including frequencies and means, were used to analyze the responses. Ns vary in the graphs slightly, as respondents were removed from the case progression if they indicated they were not involved in decisions from that point forward.

Clinician sample demographics

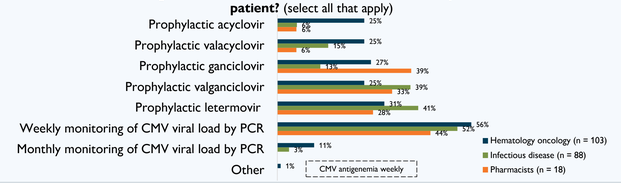
Overall, 118 hematology-oncology clinicians, 110 infectious disease clinicians, and 26 transplant pharmacists responded to the survey.

		Hematology oncology (n = 118)	Infectious disease (n = 110)	Transplant pharmacists (n = 26)
Role	Physician	93%	93%	-
	Nurse practitioner/physician assistant	7%	7%	-
	Pharmacist	-	-	100%
Years in practice after training (mean)		17	13	19
Years working with transplant patients (mean)		14	14	12
Practice setting	Community-based	47%	17%	46%
	Academic-based	53%	83%	54%
Number of patients seen per week (mean)		82	61	85
Number of patients who have bone marrow transplants per month (mean)		21	14	27

Initial CMV prophylaxis pre-HSCT

CASE: A 35-year-old woman is scheduled to undergo allogenic HSCT secondary to a diagnosis of acute myeloid leukemia (AML). She is CMV-seropositive and receiving a graft from a 10/10 HLA-matched, unrelated CMV-seronegative donor.

Which of the following methods of CMV infection prevention would you recommend for this patient? (select all that apply)



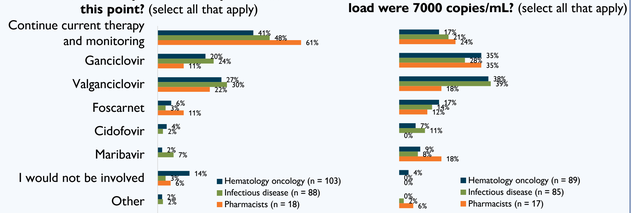
For initial prophylaxis of a patient needing a stem cell transplant, clinicians are split between all available CMV prophylactic options.

Next steps in post-HSCT CMV treatment

CASE CONTINUED: The patient is started on prophylactic letermovir and monitored with weekly CMV viral loads via PCR. Eight weeks following HSCT, her viral load increases to 1500 copies/mL. She is asymptomatic and otherwise having an uneventful post-transplant course. Her creatinine is 0.9 mg/dL, and her white blood cell count is 2 x 10^9/L.

How would you treat this patient at this point? (select all that apply)

How would you treat this patient if her viral load were 7000 copies/mL? (select all that apply)

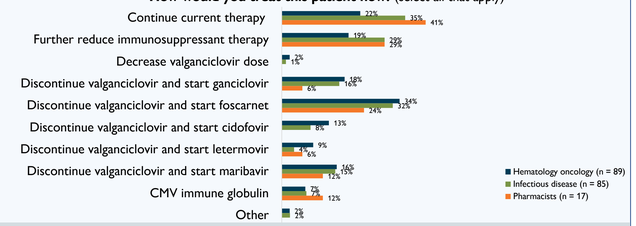


All three groups are most likely to continue current treatment and monitoring in a scenario where viral load increases to 1500 copies/mL. If the viral load is instead at 7000 copies/mL, clinicians are more likely to change to ganciclovir or valganciclovir.

Continued elevated viral load

CASE CONTINUED: The patient is treated with oral valganciclovir, and her CMV viral load is monitored weekly by PCR during treatment. It continues to rise from 1500 copies/mL at week one to 5000 copies/mL at week three despite continued administration of valganciclovir.

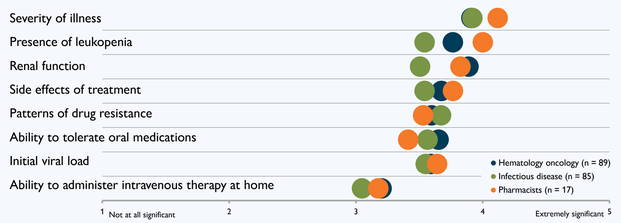
How would you treat this patient now? (select all that apply)



Pharmacists are least likely to order genotypic testing. Only 22% of hematology-oncology clinicians and 35% of infectious disease clinicians would continue current therapy if the viral load increased to 5000 copies/mL at week 3.

Important factors in determining treatment plan

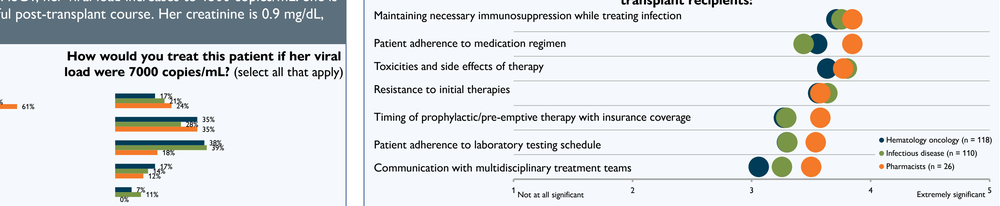
How significant are each of the following factors in your decision about how to treat this patient?



Severity of illness is the most important consideration for all three groups of respondents, followed by renal function and ability to tolerate oral medications.

Barriers to optimal management

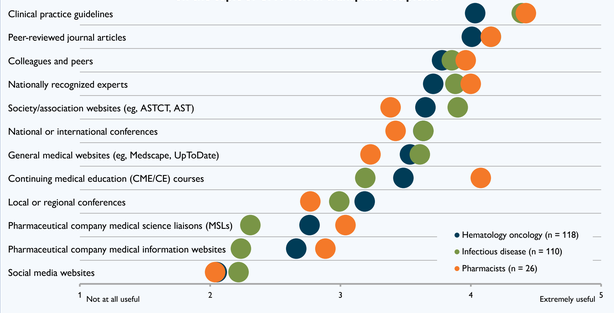
Please rate the significance of the following barriers to the optimal management of CMV risk in transplant recipients:



Key barriers to optimal CMV therapy include maintaining necessary immunosuppression while treating infection, patient adherence to medication regimen, and toxicities and side effects of therapy. Other barriers mentioned include issues getting coverage for CMV prophylaxis, access to care and availability of medications, and delays in receiving test results.

Staying up-to-date on CMV management in transplant recipients

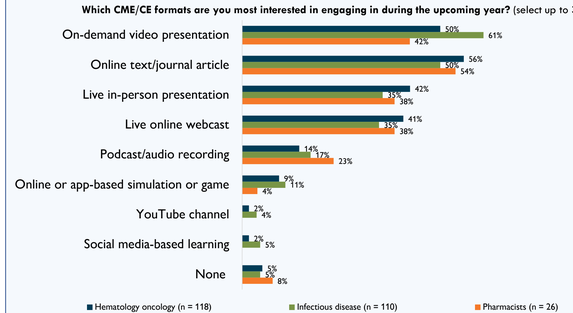
How useful do you find each of the following information sources for staying updated on the topic of CMV risk in transplant recipients?



Guidelines and journal articles are viewed as the top two information sources for staying updated on CMV management. Pharmacists find CME/CE more useful than other specialists.

Future CME preferences

Which CME/CE formats are you most interested in engaging in during the upcoming year? (select up to 3)



Clinicians most prefer on-demand videos and online text/journal articles as formats for receiving CME/CE in the next year.

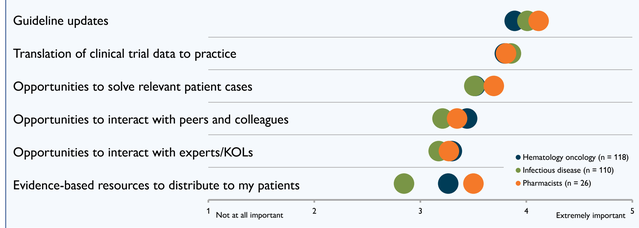
Most valuable educational topics

What topics related to CMV management in transplant would be most valuable to include in CME programs? (select top 3)	Hematology oncology (n = 118)	Infectious disease (n = 110)	Pharmacists (n = 26)
New and emerging therapies	66%	74%	69%
Guidelines and current treatments	70%	73%	65%
Developing algorithms/policies for prophylaxis	36%	32%	50%
Management of CMV resistance	53%	65%	46%
Markers to guide the management of CMV infection	27%	27%	27%
Developing and maintaining multidisciplinary treatment teams	7%	2%	15%
Communication with care coordinators	4%	3%	0%
Communication with other clinicians	6%	4%	8%
Communication with patients/caregivers	2%	0%	0%

Hematology/oncology clinicians are most interested in future CME on guidelines and current treatments, while infectious disease clinicians and pharmacists are most interested in learning about new and emerging treatments.

Preferences for educational content

How important is the presentation of each of the following to you regarding the content of a CME/CE activity on CMV management in transplant recipients?



Clinicians are most interested in receiving information on guidelines, translation of clinical trial data to practice, and opportunities to solve relevant patient cases.

Conclusions

- ❑ Guidance and expert opinion on the most appropriate CMV management options to be used in different patient scenarios is needed.
- ❑ Education may be needed on how and when to order genotypic testing, as well as management while waiting for the testing results.
- ❑ Key barriers should be addressed by education, primarily balancing immunosuppression with infection, resistance, and side effects.
- ❑ Education and information should be targeted to format delivery and when a clinician is likely to seek it out.
- ❑ Clinicians need further education on requested topics, such as how to currently manage CMV risk as well as new treatment options.

DISCLOSURES AND LIMITATIONS:

This study was funded by Takeda Pharmaceuticals U.S.A., Inc. This poster is intended for healthcare practitioners. Uma Chandrasekaran and Daniele K. Gelone are employees of Takeda Pharmaceuticals U.S.A. and hold stock in that company. Other authors have nothing to disclose. This study has limitations, primarily that cases were used as a proxy for clinical decision-making. The survey also used a quota approach to data collection, presenting a potential selection bias for clinicians interested in practice assessment of CMV.

For more information about this study, contact Brandon Coleman at brandon.coleman@ceoutcomes.com