ABSTRACT

BACKGROUND:
Cytomegalovirus (CMV) infection causes significant morbidity and mortality after allogeneic hematopoietic cell transplantation (alloHCT). CMV management after HCT focuses on antiviral prophylaxis, rapid identification and timely intervention, to prevent CMV disease and avoid long-term sequelae. The current standard of care for determination of CMV reactivation in allo-HCT recipients includes CMV antigenemia (CMV-AN) studies. CMV-AN can be detected by commercial products which detect CMV antigens in peripheral blood mononuclear cells (PBMC) stimulated with CMV antigens.

OBJECTIVE

To evaluate the potential of a CMV-specific ELISPOT assay to determine cell-mediated immunity against CMV reactivation in allo-HCT CMV seropositive recipients ≤26 weeks post-HCT

METHODS

Twenty-five patients were prospectively followed from 0 to 26 weeks after transplantation. CMV management was according to institutional protocols. Date of CMV reactivation was determined by CMV-AN, CMV reactivation-specific ELISPOT test method, or symptoms.

RESULTS

A prospective observational trial to evaluate ELISPOT immune response reading within prior 2 weeks prior to reactivation and CMV reactivation within the following 2 weeks.

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Cytomegalovirus (CMV) establishes latent infection after reactivation of acute infection

CMV reactivation is a frequent and significant complication in allogeneic hematopoietic cell transplantation (allo-HCT) patients who are CMV seropositive.

Reporting limits of ELISPOT immune response reading within prior 2 weeks prior to reactivation and CMV reactivation within the following 2 weeks.

Antiviral agents have toxic side effects and are used with caution.

Cell mediated immunity (CMI) is an important defense mechanism for controlling CMV replication. Understanding the strength of this response may help identify patients who are protected against CMV reactivation.

An enzyme-linked immunospot (ELISPOT) test that measures IFN-g producing T cells in PBMC is one of the standard immune monitoring practices in allo-HCT recipients.

CONCLUSIONS

A Prospective Observational Trial to Evaluate Cytomegalovirus (CMV)-specific T-SPOT® Assay in Hematopoietic Stem Cell Transplant Recipients: The REACT Study Interim Data Review

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