

Rapid Review: Vitamin D Supplementation in Patients with Hematologic Malignancies



Rebecca Easley-Merski, BA and Abayomi Akanji, MD/PhD

Frank H. Netter MD School of Medicine

Quinnipiac
Frank H. Netter MD
School of Medicine

Background

- Vitamin D has a role in calcium homeostasis, renal function, cytokine immune signaling, differentiation of hematopoietic cells and autoimmune diseases¹⁻³.
- Vitamin D mediates gene transcription through the Vitamin D Receptor (VDR)⁴.
- Vitamin D deficiency prior to treatment of hematologic malignancies is associated with poor outcomes⁵.
- It is also associated with socioeconomic status placing some populations at increased risk for poor outcomes⁶.

Methods

- Rapid Review methodology was employed.
- Search terms “leukemia,” “lymphoma,” “vitamin D,” and “treatment.”
- Articles were reviewed based on title, abstract, and selected for inclusion based on full article
- Inclusion criteria: demonstrates addition of vitamin D to patient medication regimen or cell line and outcome observed
- Exclusion: review articles

Vitamin D supplementation has potential to improve outcomes in certain hematologic malignancies. Randomized controlled clinical trials are needed to fully investigate Vitamin D's potential as a therapeutic supplement.

Results

- Thirty-four articles describing eight types of hematologic malignancies were included in this analysis.
- *In vivo* studies show mixed or minimal response to vitamin D supplementation in acute myelocytic leukemia, myelodysplastic syndromes, and mycosis fungoides and increased chemotoxicity in Hodgkin's lymphoma and diffuse large B cell lymphoma
- *In vitro* studies show increased differentiation in acute and chronic myelocytic leukemias and increased chemosensitivity and cellular toxicity in Hodgkin's lymphoma

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