

Vitamin D Levels in Pediatric Patients Undergoing Chemotherapy

Madison Schoeberl, Nikhita Prabhakar, Megan Mikkelson, Eduardo Urias, Chris Scott, Jaehoon Lee, Chwan-Li Shen, Mohamad M. Al-Rahawan



TEXAS TECH UNIVERSITY
HEALTH SCIENCES CENTER



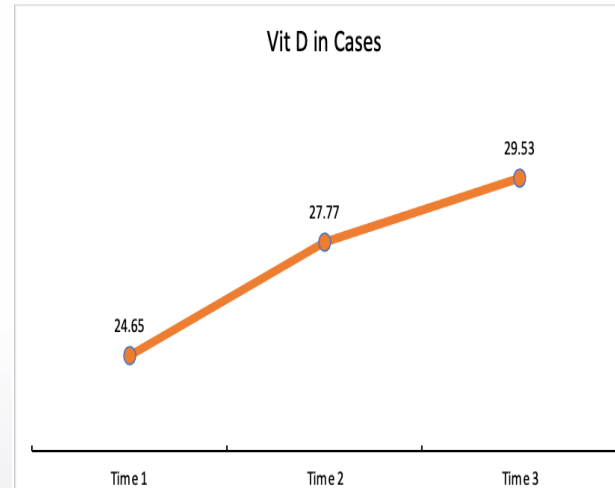
INTRODUCTION

- Vitamin D has important roles in bone health, immune function, metabolic regulation, and cancer.
- Children with cancer may be especially vulnerable to fluctuating Vitamin D levels due to their disease itself, chemotherapy, and limited nutrition and sun exposure.
- Literature addresses only childhood cancer survivors after therapy concluded

METHODS

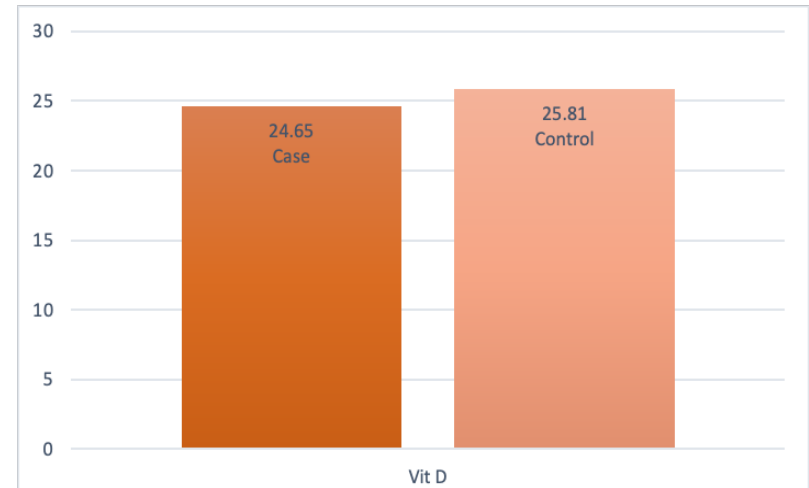
- Prospective case control study
 - Case: children (<21 yr) on chemotherapy for more than 6 months
 - 53 age-and-ethnicity-matched
- Fever in patients with cancer during the study period was recorded
- Fever severity score was calculated for each febrile episode.
- This study investigated
 - Incidence of vitamin D in cancer affected children vs controls
 - Change in vitamin D levels through the course of cancer treatment
 - Correlation between vitamin D levels and
 - number of fever episodes
 - fever severity score
 - Vitamin D (25OHD) was assessed at
 - baseline (T1, both cancer and control groups)
 - 3-4 months later (T2 cancer)
 - 6-8 months later (T3).

Chart 1



Vit D increased over time among cases (p = 0.0289).

Chart 2



No difference in Vit D between cases and controls (p = 0.53).

Table 1: Demographics

	N	Age (yr)	BMI (kg/m ²)	Gender (male)	Ethnicity (Hispanic)
Cancer*	47	8.2 ± 5.4	19.2 ± 4.7	66.0%	48.9%
Control	53	8.9 ± 5.0	19.0 ± 5.3	62.7%	56.9%

* The cancer and control groups were comparable in terms of age, gender, ethnicity, BMI, and 25OHD at baseline (all p>0.05)

RESULTS

- Table 1, Chart 1 and Chart 2
- A few cases missed some planned draws due to COVID-19.
- Among cases, Vit D did not correlate with the number of fever episodes or fever severity scores (all p>0.05).

CONCLUSION

- Our findings suggest that children with cancer are not at higher risk of Vit D deficiency.
- Vit D level dose not affect incidence of fever or fever scores.
- Larger studies are needed

ACKNOWLEDGMENTS

The Clinical Research Institute (CRI); and the Center of Excellence for Integrative Health (CEIH) have contributed tremendously to this project.