

Assessment Of Vitamin D Status Among Pediatric Cancer Patients

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M.B.B.CH
M.Sc.

A Thesis Submitted in Partial Fulfillment of Requirement for the MD
of Pediatrics

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2019

Abstract

Background: Vitamin D has a significant anti-tumor potential and hypovitaminosis D had been found to be associated with increased risk of cancer development and progression. Recently, vitamin D had been proposed as a new promising candidate for treatment of various malignancies. **Aim of the study:** This study aims to assess serum vitamin D level and bone mineral density indices among children treated for cancer. **Patient and methods:** The current study had been conducted on 50 children diagnosed with cancer (5 - 15 years old) and 50 age- and sex-matched controls at Fayoum University Hospitals during the period from September 2016 to September 2017. Serum level of 25-hydroxyvitamin D, parathormone, total calcium, phosphate, and alkaline phosphatase were measured for all participants. Bone mineral density was determined by DXA scan for all children. **Results:** Vitamin D deficiency was highly prevalent among both of our cases (74%; mean: 16.8 ± 8.1 ng/mL) and controls (70%; mean: 16.5 ± 8.5 ng/mL) with p-value of 0.9. Only 10% of cases were found to have high PTH levels (p-value 0.9). High alkaline phosphatase levels were found in 8% of the cases while none of them had developed hypophosphatemia or hypocalcemia. Low BMD was detected in 2% of the cases according to their TBLH Z-score indices while it was detected in 8% of them according to LS indices (p-value 0.9 for both). **Conclusion:** Vitamin D

deficiency was highly prevalent among our study population but it didn't correlate significantly with age, BMI, solar exposure duration, type of malignancy, age at its 1st presentation, treatment regimens or duration. Low vitamin D levels were significantly associated with higher PTH values but not with other values of bone biomarkers or BMD indices.

Keywords: childhood malignancy, vitamin D, bone mineral density, parathormone, bone biomarkers.

