Hypovitaminosis D in overweight/obese children, residents of a low-income community, on the Southeast of Brazil.

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Abstract

The deficiency of micronutrients, including vitamin D, is frequent in several countries, regardless of the nutritional state, however, it's magnitude is higher in overweight children[1]. There are many evidences that overweight children and teenagers represent a vulnerable group to vitamin D deficiency. Besides that, the deficiency of vitamin D appears to be the biggest contributory factor to complications associated to obesity, such as insulin resistance and type 2 diabetes.[2] Various studies have been demonstrating associations between deficiency of vitamin D and a variety of diseases, including diabetes mellitus, metabolic syndrome, cancer, cardiovascular diseases, multiple sclerosis and neuromuscular malfunction, causing nutritional rickets and osteomalacia, which have a major impact on health, growth, and development of infants, children, and adolescents[4] (Figure1). The main goal of this study is to evaluate the prevalence of hypovitaminosis D and intervene by providing adequate supplementation[5]. Methodology & Theoretical Orientation: Serum dosages of 25-OHD3 and PTH (parathyroid hormone) were performed in 111 overweight/obese children, on the month of March (summer) of 2016. All of the children that were detected with insufficiency (<29ng/ml) received supplementation on the dosage of 50.000 UI of Cholecalciferol/ weekly, during six weeks. Findings: The prevalence of hypovitaminosis D in this group was of 60,36% (49,24% girls e 50,7% boys). Conclusion & Significance: Hypovitaminosis D is elevated on the presented group, meeting other studies performed in various locations in Brazil and foreign countries. The fact that dosages were performed in a period that coincided with the end of the summer calls our attention. Supplementation was performed in a critic period to elevation of taxes of hypovitaminosis D (beginning of winter).

Biography

Pollyanna Fernandes Patriota is a nutritionist and a professor of a Federal University on the area of Public Health, Phd student in Nutrition on the Federal University of São Paulo (Universidade Federal de São Paulo - UNIFESP). Holds experience on teaching, research and extension on the areas of Nutrition and Public Health, maternal and child health, child obesity and composes the Group of Research "Nutrition and poverty" on the Institute of Advanced Studies on the University of São Paulo (IEA - USP).

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Image

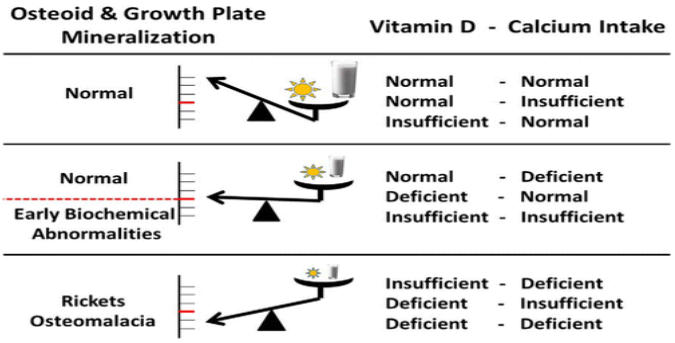

Figure 1. Biochemical disturbances in rickets pathogenesis based on a three-stage classification of vitamin D status (symbolized by the sun) and calcium intake (symbolized by a glass of milk).[5]

Notes/Comments:

(2) Acts as researcher on postgraduate studies in Nutrition on UNIFESP. (3) Researcher and Titular Professor on postgraduates studies on UNIFESP.

Recent Publications

1. Cunha, KA et al. Ingestão de Cálcio, níveis séricos de vitamina D e obesidade infantil. Rev. Paul Pediatr. 2015; 33(2): 222-229. http://dx.doi.org/10.1016/j.rpped.2015.03.001.
2. Peterson,CA and Tosh, AK et al.Vitamin D insufficiency and insulin resistance in obese adolescents.Ther Adv in Endocrinol Metab 2014, Vol 5(6): 166-189. doi: 10.1177/2042018814547205.
3. Mansour MM, Alhadidi KM. Vitamin D deficiency in children living in Jeddah Saudi Arabia. Indian J Endocrinol Metab. 2012 Mar;16(2):263-9. doi: 10.4103/2230-8210.93746.
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5. Hollick, MF et al. Evaluation, Treatment, and Prevention of Vitamin D Deficiency: an Endocrine Society Clinical Practice Guideline. The Journal of Clinical Endocrinology & Metabolism. 2011.Vol 96(7). doi: 10.1210/jc.2011-0385. Epub 2011 Jun 6.