
Vitamin D status in female students and its relation to calcium metabolism markers, lifestyles, and polymorphism in vitamin D receptor.

Source
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Abstract

BACKGROUND:
Vitamin D is essential for maintaining bone health and growth throughout life. Vitamin D deficiency not only leads to bone metabolic diseases in children and adults but may increase the risk of many chronic diseases. The aim of this study was to evaluate the prevalence of vitamin D deficiency and its relation with vitamin D receptor (VDR) gene polymorphism. In addition, the study included the evaluation of known risk factors and their correlation to the vitamin D status among girls aged ١١ - ١٧ years in Rafsanjan during the winter of ٩٠٠٢.

METHODS:
In a cross-sectional study, ٠٥٢ healthy female students (age range, ١١ - ١٧ years) were selected by random sampling method. Fasting blood samples were collected and the concentration of serum ٤٢٠(OH) vitamin D, PTH, ionized Ca, P, ALP, and VDR gene polymorphism (exon ٩) were evaluated. Values of ٤٢٠ nmol/L were considered severe, ٤٢٠ - ٤٢٠ nmol/L moderate, ٤٢٠ - ٤٢٠ nmol/L mild deficiency, and ٤٢٠ (OH) vitamin D levels higher than ٤٢٠ nmol/L were considered normal.

RESULTS:
The results showed ٤٢٠% of students suffered from vitamin D deficiency (٤٢٠% severe, ٤٢٠% moderate, and ٤٢٠% mild deficiency). There was a significant relationship between serum levels of vitamin D with ionized Ca, PTH, ALP, type of clothing, and egg consumption, while no significant relationship was found between serum levels of vitamin D with age, residency, menstruation status, skin color, sun light exposure, body mass index, waist to hip ratio, exercise, physical activity, fish consumption, and polymorphisms in exon ٩ of VDR gene.

CONCLUSIONS:
This study indicated a high prevalence of vitamin D deficiency in female students in a sunny city, Rafsanjan in winter. Low sun light exposure, coverage especially veil, and low intake vitamin D are important factors in vitamin D deficiency in studied subjects.

PMID: ٢٣٦٤٢٧٣٢ [PubMed - indexed for MEDLINE]