

Research article

VITAMIN D DEFICIENCY IN THE WELL FED CLASS OF PAKISTAN: THE POSSIBLE CAUSES AND TRENDS

Yusra H. Siddiqui *, Rashid Minhas, Adnan Yaqoob, Samina Shakeel

Department of Biochemistry, Quaid-e-Azam University, Islamabad, Pakistan

This population-based survey was conducted to determine frequency of vitamin D deficiency in the twin cities of Pakistan. 1000 patients were evaluated for tests of circulating 25-hydroxy-vitamin D (25-OHD) levels using electrochemiluminescence method. Median 25-OHD was 14.73 ng/ml, 14.12 ng/ml in females and 16.51 ng/ml in males. Their mean age was 45.02 years. 73 % had vitamin D deficiency (males 20.7% ; females 79.2%), 16 % had insufficiency (males 25.7%; females 72.9%) and only 11 % were vitamin D sufficient (males 29.1%; females 70%). T-test and Chi-square test were done and a marked pattern observed in males was that after 50 they tend to be less vitamin D deficient. These data conclude that vitamin D deficiency is extensive in the twin cities of Pakistan and suggest that routine monitoring of vitamin D levels may be of benefit.

Key words: Vitamin D; Blood levels; Rickets; Osteomalacia; Bone problems

Introduction

Several important developments have regenerated interest in vitamin D. Serum 25-hydroxy-vitamin D (25-OHD) is widely recognized as the best measure of vitamin D status and its role in the maintenance of the immune, reproductive, muscular, skeletal and integumentary systems being extensively acknowledged (Whiting and Calvo, 2005).

Vitamin D deficiency appeared during the industrial revolution and at the beginning of the twentieth century an outbreak of the vitamin D deficiency disease rickets occurred among urbanised young children on both sides of the Atlantic Ocean (Shrapnel and Truswell, 2006). Numerous studies have identified a high prevalence of vitamin D deficiency and insufficiency in people living in North America and Europe. Reports of extensive vitamin D deficiency are also well documented in literature in nursing home patients and ambulatory ones (Mosekilde, 2005; Zuberi et al., 2008).

It has been well established that vitamin D is essential to bone health, severe deficiencies leads to osteomalacia and rickets, mild to moderate deficiencies can result in osteoporosis and increased fracture risk (Pfeifer et al., 2002). But, in this country where numerous other major problems exist, little attention is given towards deficiency of such a major vitamin and it is generally assumed that the economically fit individuals do not suffer from this deficiency.

The present study was carried out to determine the frequency of vitamin D deficiency in the two major cities of Pakistan, Islamabad and Rawalpindi. These two cities are well developed in all respects, with modern infrastructure facilities and a high standard of living. Residents here have a healthy life style.

Materials and Methods

Setting

The second author collected all the data from patients enrolled at Excel Labs Pvt. Ltd., Islamabad, Pakistan, between November 2008 to March 2010, a time span of 17 months.

*Corresponding author Email: y.siddiqui@bristol.ac.uk,
Tel Number: 0044-750-1666996